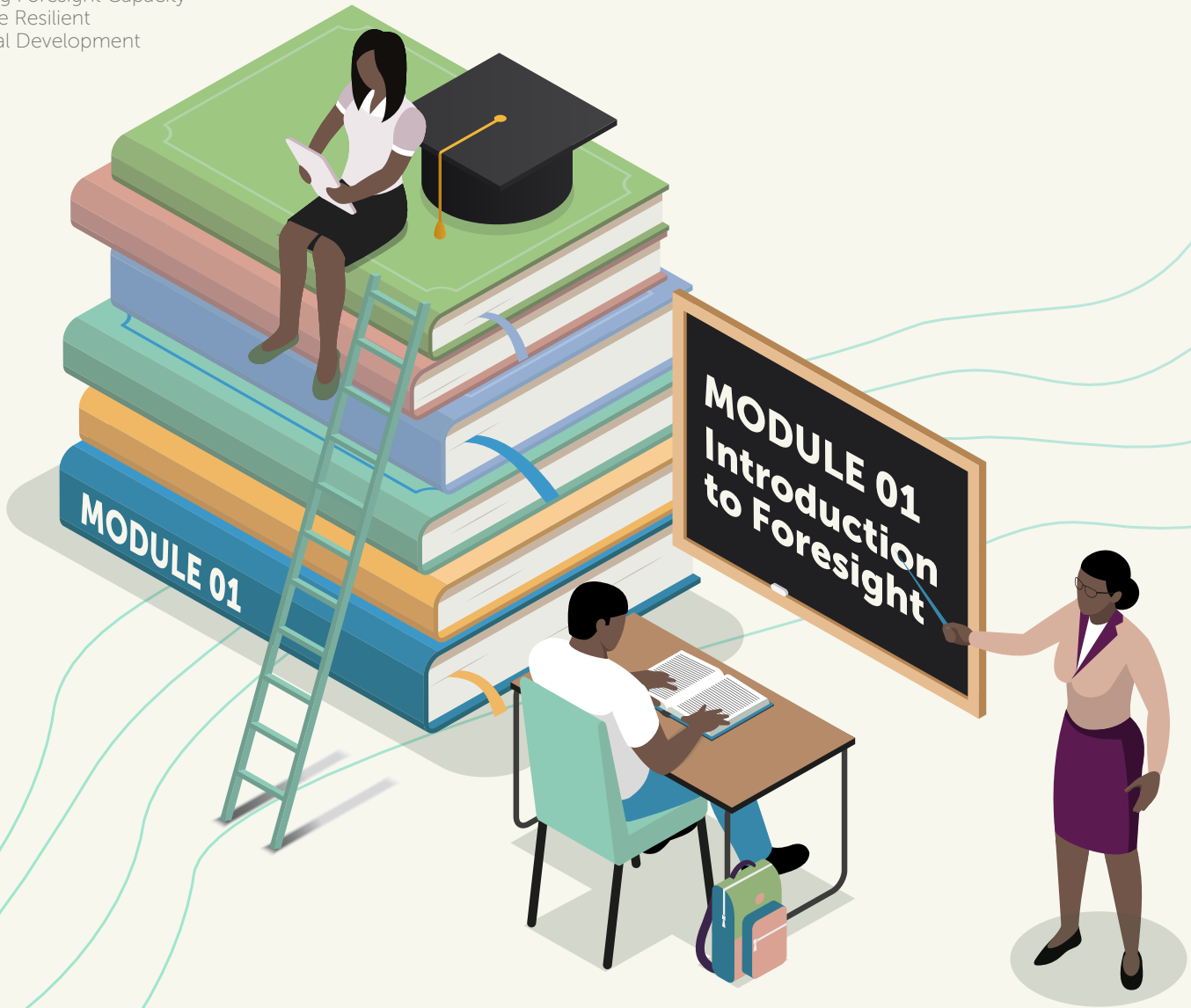
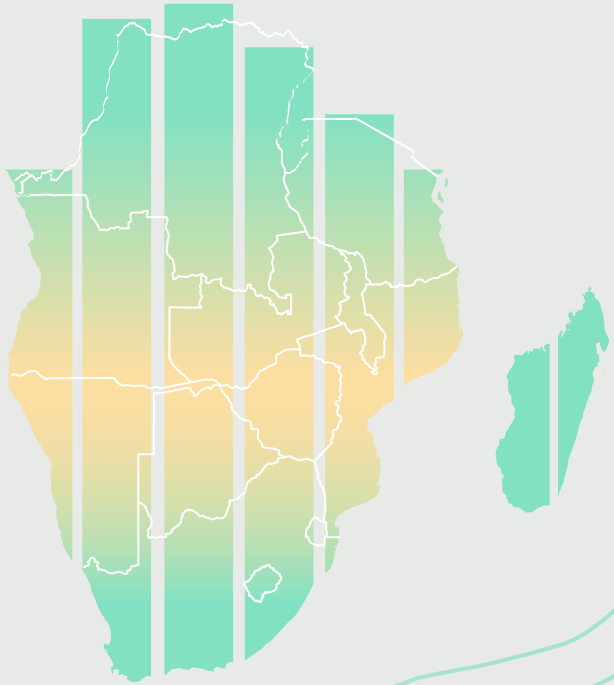
SADC Futures

Developing Foresight Capacity for Climate Resilient Agricultural Development



MODULE 01
Introduction to Foresight

CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security
CCAFS
ILRI INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE
german cooperation
Implemented by: giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
CCARDESA Centre for Coordination of Agricultural Research and Development for Southern Africa



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SADC FUTURES FORESIGHT TRAINING TOOLKIT

The SADC Futures project (https://bit.ly/SADCFuturesForesight) has developed a range of foresight training materials. The SADC Futures Foresight Training Toolkit forms part of this knowledge series and presents content that was given during the SADC Futures webinar series, a six-part virtual webinar series and facilitated training.

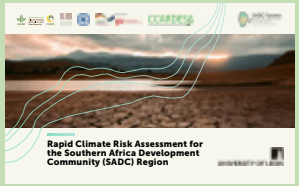
INPUT

Structures, Policies and Stakeholder Landscape Relevant to Climate Change and Agriculture in the SADC Region

ANALYSIS

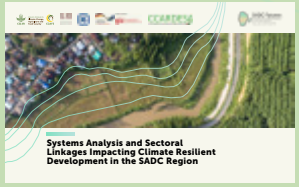
Historical Analysis of Climate Change and Agriculture Related Events in SADC

Mega-trends in the Southern African Region



Rapid Climate Risk Assessment for the Southern Africa Development Community (SADC) Region

INTERPRETATION



Systems Analysis and Sectoral Linkages Impacting Climate Resilient Development in the SADC Region

PLAN

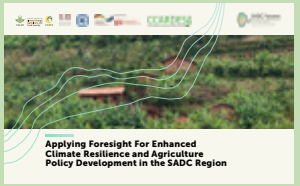
Climate Resilient Development Pathways

PROSPECTION

What Are Scenarios Telling Us About Developing Climate-Resilient Pathways in the Southern African Region?

REFLECTION

STRATEGY



Applying Foresight For Enhanced Climate Resilience and Agriculture Policy Development in the SADC Region

SADC Futures Foresight Training Toolkit

The purpose of the toolkit is to provide accessible training to multiple stakeholders on key foresight methods and how and when to apply them.

SADC Futures Foresight Framework

A tailored foresight training framework was created for the project, as a foresight exercise typically includes several methods and tools. The framework brings together the key stages of foresight, with methods and approaches that are relevant to the application for climate resilient agricultural development. This theme was chosen as **climate change poses the greatest threat to the SADC region's agricultural system and therefore technical capacity is needed to address these future impacts and adapt plans, policies, and programs**.

The foresight framework **guides users in the practical application of the chosen foresight tools and methods for innovative strategic planning and policy formulation for climate resilience**. It is important to note that there is no standardised way of doing foresight, the methods and tools presented in the framework were chosen specifically for the theme of climate-resilient agricultural development in the SADC region.

The foresight framework has been built around seven stages that address key questions.

Data, evidence, knowledge and creativity

Stakeholder engagement and participation

INPUT

Context

- Scope
- Theme or key topic
- Geopolitical boundary
- Structures & policies
- Timeline
- Stakeholder Mapping

ANALYSIS

What is happening?

- Trend Analysis
- Horizon Scanning
- Evidence

INTERPRETATION

Why is it happening?

- Systems Mapping
- Cross sectoral and multi-stakeholder approaches

PLAN

What do we want to experience in the future? What might get in our way?

What might we do to get there?

- Visioning
- Causal Analysis
- Stakeholder Analysis
- Backcasting
- Pathway Development & Trade-offs

PROSPECTION

What might happen that we have not thought about?

- Developing Scenarios
- Identify drivers and critical uncertainties
- Develop plausible future scenarios

REFLECTION

What might we want to do differently?

- Scenario Implications
- Transformation Elements
- Transformational Change

STRATEGY

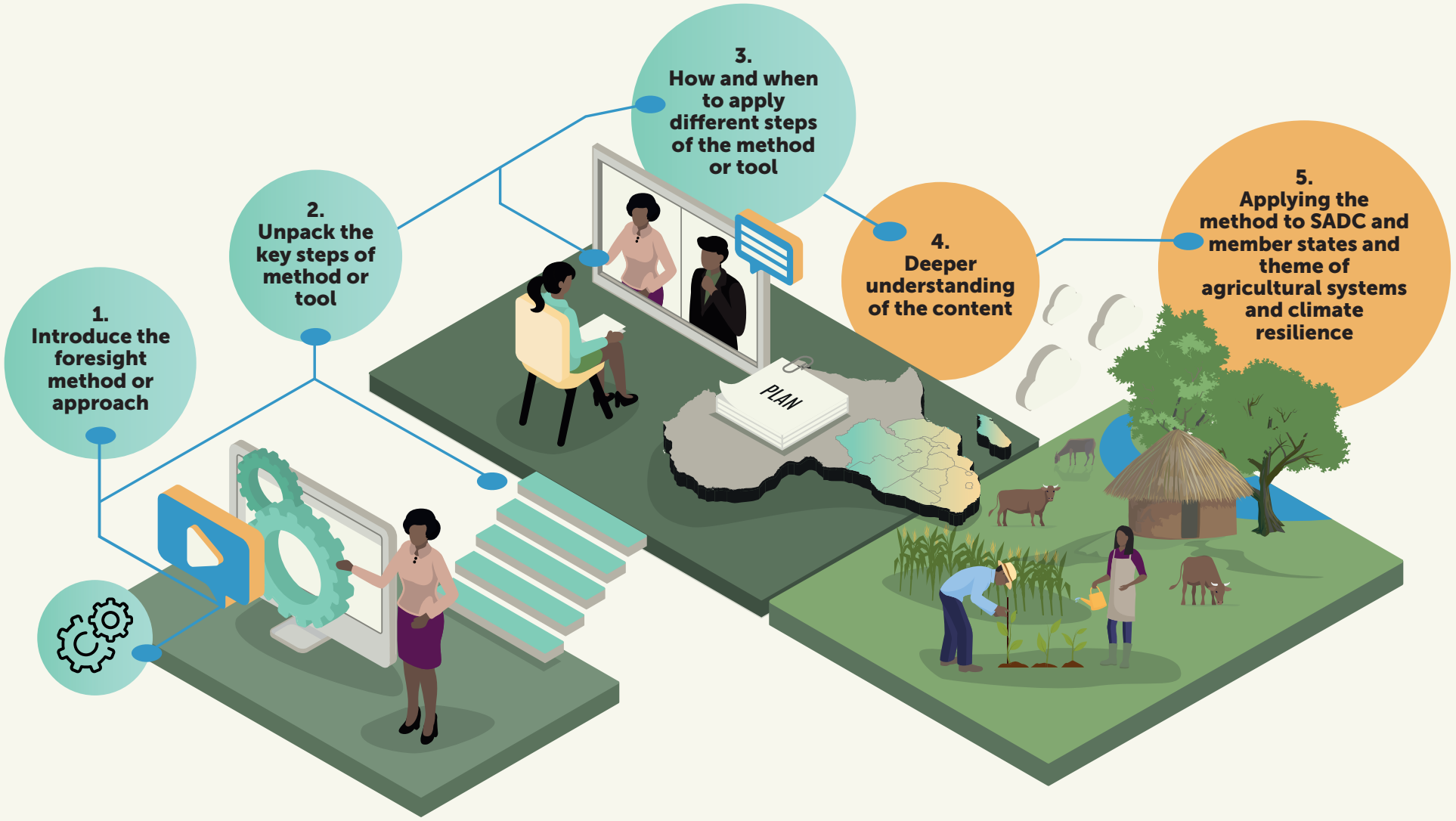
What will we do differently?

- Transforming Climate Resilient Pathways

SADC Futures
Developing Foresight Capacity for Climate Resilient Agricultural Development

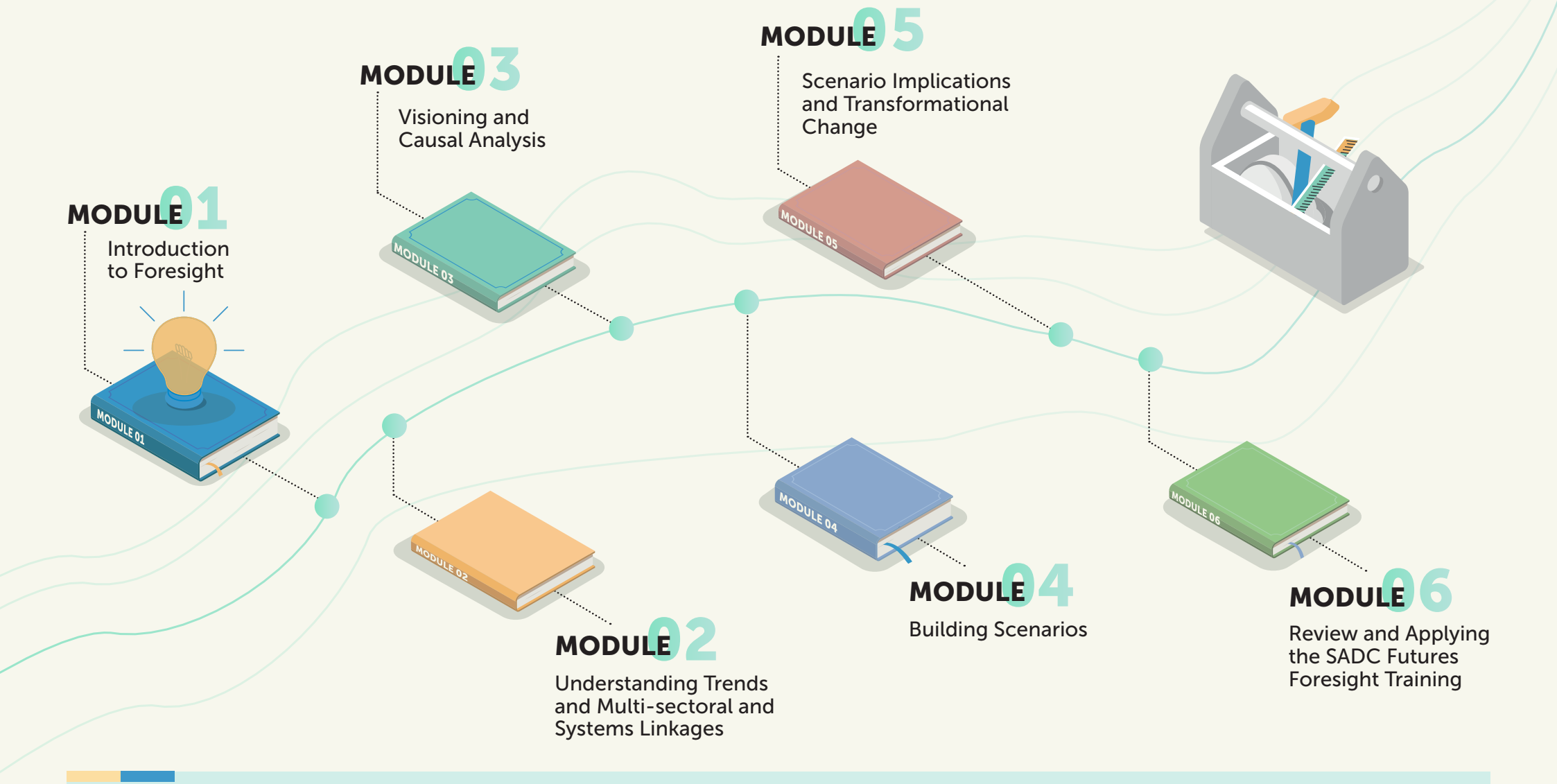
Training approach

The training approach used starts by introducing the foresight method or tool and the key steps to follow in using it. An explanation of how and when to apply the different key steps is provided. The application of the method or tool is then demonstrated in the context of climate-resilient agriculture development in the SADC region.



Structure of the toolkit

The toolkit comprises six modules. **This document presents Module 1: Introduction to Foresight.**



Within the modules, reference is made to the SADC Futures knowledge series supplementary reports (as previously shown mapped to the foresight framework). These reports provide further detail on the use of the foresight methods and tools for building climate-resilient agricultural development in the SADC region.

How to use the toolkit

Exercises, learning reflections and key questions are provided throughout the toolkit modules to equip users to practically apply the range of foresight tools and methods. They are indicated by a variety of icons as illustrated below.

'Test Your Learning' exercises are provided at the start of each module. These exercises test the user's knowledge of the SADC Futures Foresight Training Framework. The exercises are based on information learnt in the preceding modules and provide a refresher for the user before progressing with the next module.

Learning Exercises are included throughout the toolkit modules to provide step-by-step guidance on how to apply the different foresight methods and tools. These exercises are demonstrated in the context of climate resilient agri-food systems in the SADC region.

Further practical exercises are provided to assist the user in applying foresight in the context of their chosen theme as they progress through the training. The materials produced by the user during the exercises are built upon in a sequential manner along the foresight framework.

Learning reflections are provided at the end of each foresight method. These allow the user to reflect on what they have learnt before moving on to the next method.

To guide the thought process of the user **key questions** and answers are highlighted throughout the manual.

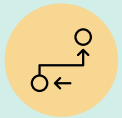
Questions and Answers from participants of the SADC Futures webinar series

'Questions and Answers' are scattered throughout the toolkit to provide an added learning experience. These questions were put forward by participants of the SADC Futures webinar series. The answers to the questions were provided by specialists in the respective fields in question.

Glossary of Key Terms[i]

Foresight

Term	Description
Backcasting 	The process of working backwards from the definition of a possible future to determine what needs to happen to make the future unfold and connect to the present.
Barrier 	Identified obstacle that could stop the achievement of an activity.
Black Swan 	An event that could absolutely not be predicted.
Brainstorming 	A method of obtaining ideas without judgement or filtering. It involves encouraging wild and unconstrained suggestions and listing ideas as they emerge.
Causality 	A logical link between events, where a cause precedes an effect and altering the cause alters the effect.
Complexity 	Complex systems are non-linear and diverse networks made up of multiple interconnected elements. Cause and effect relationships within the system are not easily discernible or predictable. Historical extrapolation is not possible for predicting emergence (new patterns and behaviours) in complex systems.

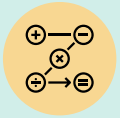
Term	Description
Critical Uncertainties 	Are drivers that are both highly impactful and highly uncertain.
Cross-cutting Issues 	Issues or challenges that affect more than a single interest area, institution, or stakeholder, and that need to be addressed from all points of view.
Drivers 	Are factors, issues or trends that cause change thereby affecting or shaping the future.
Driving Force 	A cluster of individual trends on the same general subject moving trends in certain directions, they are broad in scope and long term in nature (for example, climate change or globalisation).
Evidence 	The integration of raw data constituting numbers, words, images, and insights emerging from diverse knowledge sources.
External Driver 	External force of change, for example political or market drivers.

Term	Description
Feasible 	Possible and practical.
Forecast 	An estimate or best guess of what might happen in the future i.e. not a definitive prediction.
Foresight 	Structured tools, methods and thinking styles to enable the capacity to consider multiple futures and plan for them.
Foresight Organising Group 	A small core group that builds the foresight plan
Foresight Participating Group 	A broad mix of identified key stakeholders that need to be involved
Futuring 	The act, art, or science of identifying and evaluating possible future events.

Term	Description
Grey Rhino 	These are the large, obvious dangers that will sooner or later emerge but whose exact timing is unknown.
Impact 	Refers to the potential scale of impact of a driver on a scenario theme.
Internal Driver 	Internal force of change for example, social drivers within a farm or community directing the decision making of a farmer.
Mega-trend 	A trend that is apparent at a large or global scale e.g. growing youth population across the African continent.
Mind Mapping 	Allows a group's ideas to be charted in logical groupings fairly quickly, even when ideas are given in a non-sequential manner. This technique allows efficient brainstorming for ideas and at the same time creates a skeletal framework for later categorisation of the information generated.
Modelling and Simulation 	The process of creating and experimenting with a computerised mathematical model imitating the behaviour of a real-world process or system over time. Simulation is used to describe and analyse the behaviour of a system when asking 'what-if' questions about the real system and aid in the design of real systems.

Term	Description
Not Predictive 	Participatory with multiple viewpoints, bringing in quantitative and qualitative evidence but not predictive.
Pathway 	A trajectory in time, reflecting a sequence of actions and consequences against a background of separate developments, leading to a specific future situation.
Plausible 	It is reasonable to assume the scenario could happen. Plausibility does not mean that a future situation will happen.
Predictability 	The degree of confidence in a forecasting system based either on law derived from observations and experience, or on scientific reasoning and structural modelling.
Projecting 	A quantitative technique that can be used in the analysis phase of the foresight process. Projecting or time series analysis are used when several years of data are available, and trends are both clear and relatively stable.
Projection 	An expected value of one or more indicators at particular points in the future, based on the understanding of selected initial conditions and drivers.
Resilience 	A system's ability to cope with and recover from shocks or disruptions, either by returning to the status quo or by transforming itself to adapt to the new reality.

Term	Description
Scenarios 	Are storylines/narratives, answering 'what if' questions that describe multiple alternative futures spanning a key set of critical uncertainties. Scenarios identify future drivers of change and then plot out plausible directions that they may take.
Scenario Development 	An approach to understanding highly impactful and highly uncertain drivers and to describe possible future states. Although they address uncertainty, scenarios are not predictions or forecasts - they are not 'true' or correct/ wrong - only plausible.
Social Network Mapping 	A tool to identify the importance and influence of stakeholders as well as how they exchange information or are connected.
Time Frame 	The complete period (past-to-future) considered in a foresight exercise.
Transformation 	An agriculture and food systems transformation is a significant redistribution - by at least a third - of land, labour and capital, and/ or outputs, and outcomes (e.g. types and amounts of production and consumption of goods and services) within a time frame of a decade.
Trend 	A general tendency or direction of a movement or change over time e.g. increasing erratic seasonal rainfall patterns.

Term	Description
Trend Impact Analysis 	Collecting information and attempting to spot a pattern, or trend, and assess its influence from the information.
Uncertainty 	Refers to how much or how clear we are on how a driver will emerge or play out in the future. High uncertainty does not mean 'high improbability', high uncertainty can mean having little knowledge of how something may pan out.
Underlying Cause 	Unpacking why an obstacle is in place.
Unknown Unknowns 	Issues and situations in organisations that have yet to surface and which are blind spots for planners who are unaware that they do not know about them.
Viable 	Able to be done or could occur.
Vision 	A compelling image of a (usually preferred) future.

Term	Description
Visioning 	A well-known prospective technique with a highly participatory approach.
Wicked Problem 	A problem that is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognise.
Wild Card 	A low-probability but high-impact event that seems too incredible or unlikely to happen.

Climate Resilience

Adaptive Capacity 	The ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.
Climate Change 	Climate change is a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer.
Climate Resilience 	The ability of a system to 'bounce back' from the impacts of climate-related stresses or shocks. It is the ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions.

Term	Description
Exposure 	Refers to the inventory of elements in an area in which hazard events may occur.
Hazard 	A possible, future occurrence of natural or human induced physical events that may have adverse effects on vulnerable and exposed elements.
Risk 	Intersection of hazards, exposure, and vulnerability.
Sensitivity 	The degree to which a system is affected, either adversely or beneficially, by climate variability or change.
Social Vulnerability 	Inability of people, organisations, and societies to withstand adverse impacts from multiple stressors to which they are exposed.
Vulnerability 	The propensity or predisposition of a system to be adversely affected by an event. Vulnerability is a function of a system's sensitivity, and its adaptive capacity.

Agricultural Systems

Term	Description
Agriculture 	Is the science, art, or practice of cultivating soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products.
Agricultural Value Chain 	Includes the people and activities that bring a basic agricultural product such as maize to the consumer. The activities include obtaining inputs and production in the field right through to storage, processing, packaging, and distribution.
Biological Diversity 	The variability among living organisms from all sources, including terrestrial, marine, and aquatic ecosystems.
Cross Sectoral Coordination 	The engagement, management, planning and implementation, of activities conducted across different thematic sectors to deliver development outcomes (e.g. food security, nutrition, sustainable landscapes, and agriculture).
Ecosystem Services 	These include provisioning services, such as the production of food (e.g. fruit for humans or grazing for cattle) and water; regulating, such as the control of flooding and disease; supporting, such as nutrient cycles and oxygen production; and cultural, such as spiritual and recreational benefits.

Term	Description
Elements 	The different, discrete elements within a system (e.g. farms, organisations, inputs, and soil).
Interconnections 	The relationships that connect the elements (e.g. rules, ideas, funding, or service relationships, among others).
Land Degradation 	A process in which the value of the biophysical environment is affected by a combination of human land-use activities. It is viewed as any change or disturbance to the land perceived to be undesirable.
Multi-Stakeholder Collaboration 	Consists of a mix of representatives or stakeholders from public, civil, and private domains of society.
Post-Harvest Loss 	Is the loss in quantity and quality of agricultural produce between harvest and consumption. It includes on-farm losses e.g. damage to grain by pests, as well as losses along the value chain during transportation, storage, and processing.
Pre-production 	This stage of the agricultural process is prior to production and may involve land preparation and the sourcing and purchasing of inputs such as seed and fertiliser.

Term	Description
Productive Inputs 	These are used to increase yields and range from improved seeds, genetics, fertilisers and crop protection chemicals to machinery, irrigation technology and knowledge.
System 	An interconnected set of elements that is coherently organised in a way that achieves something (function and purpose). For example, the purpose of an agricultural system could be to produce dairy products and the system could consist of interconnected elements such as the farmer, employees, cattle, machinery, feed, water, and energy.
Systems Thinking 	A mindset, tool, and process that is reserved for complex problems.
Systems View 	Understands life as networks of relationships.
Transboundary Animal Disease 	Epidemic disease which is highly contagious or transmissible and has the potential for very rapid spread, irrespective of national borders, causing serious socio-economic and potentially public health consequences.

[i]Definitions for the glossary were obtained from several information sources (listed below) as well as from specialists in the respective fields.

Cardona, O.D., van Aalst, M.K., Birkmann, J., Fordham, M., McGregor, G., Perez, R., Pulwarty, R.S., Schipper, E.L.F. and B.T. Sinh, (2012). Determinants of risk: exposure and vulnerability. In: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation [Field, C.B., Barros, V., Stocker, T.F., Qin, D., Dokken, D.J., Ebi, K.L., Mastrandrea, M.D., Mach, K.J., Plattner, G.-K., Allen, S.K., Tignor, M. and Midgley, P.M. (eds.)]. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC). Cambridge University Press, Cambridge, UK, and New York, NY, USA, pp. 65-108.

Conway, M., (2014). Foresight: an introduction. Thinking futures. Melbourne.

European Foresight Platform, (n.d.). For Learn: What is foresight? Retrieved from EFP Supporting Forward Looking Decision Making: https://foresight-platform.eu/community/forlearn/what-is-foresight/.

FAO Food Safety and Quality Program, (2014). Horizon scanning and foresight: an overview of approaches and possible applications in food safety. Presented at the Food Safety Technical Workshop, FAO, Rome.

Forward Thinking Platform, (2014). A Glossary of Terms commonly used in Futures Studies Full Version. Global Forum on Agricultural Research (GFAR).

Jackson, M., (2013). Practical foresight guide. Shaping Tomorrow.

OECD, (2018). Using foresight methods to adapt development co-operation for the future, in: development co-operation report. Paris: OECD Publishing.

UNDP, (2017). Africa and foresight: better futures in development. Singapore: Global Centre for Public Service Excellence.

UNDP, (2018). Foresight manual: empowered futures for the 2030 Agenda. Singapore: Global Centre for Public Service Excellence.

UNDP, (n.d.). Foresight: the manual. UNDP Global Centre for Public Service Excellence, Singapore.

Photo: Felix Clay, Duckrabbit 2012

CONTENTS

What Will You Learn?

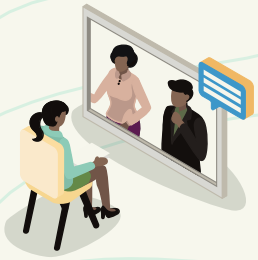
This module starts with an **introductory section, providing background on what foresight is and why it is a valuable method**. It explains that foresight is a set of tools and approaches for future planning. In addition to establishing a background on foresight and the key methods and approaches in setting up a foresight exercise, the module introduces the theme of climate resilient agri-food systems in the SADC region and how foresight can be used to enhance strategic planning and policy formulation to achieve this.

The next section of the module presents the start of the learning process of 'how to do foresight' by setting up a foresight exercise and applying the defined methods and tools. This module focuses on the input stage of the foresight process, specifically the scope method and associated key terms.

The following steps will be taken to define the scope:

- **Setting the theme;**
- **Setting geo-political boundaries;**
- **Understanding the relevant structures and policies;**
- **Setting the timeline; and**
- **Mapping stakeholders.**

Introducing Foresight



Scope Method

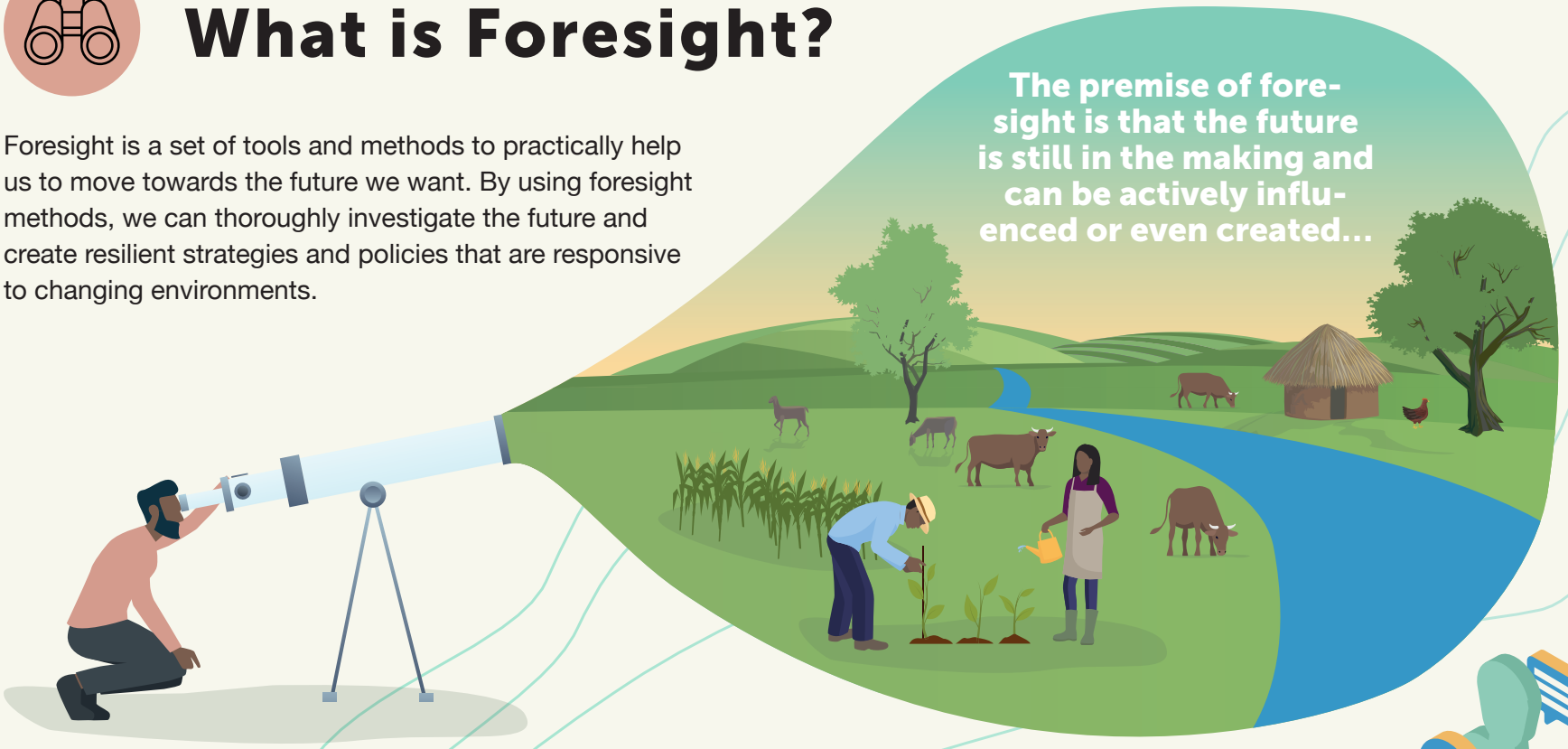
Theme

Boundaries, Policies and Structures

Timelines and Stakeholder Mapping

What is Foresight?

Foresight is a set of tools and methods to practically help us to move towards the future we want. By using foresight methods, we can thoroughly investigate the future and create resilient strategies and policies that are responsive to changing environments.



Key points to note:

- **The future has not yet been decided,** it is actively made through our decisions and the actions that we take. Understanding this can be an empowering realisation (UNDP, 2018).
- **Foresight requires a change in mindset.** People habitually think about the 'future' as predetermined and unfolding or that the past is eternally repeated. As a result, it can prove difficult to move beyond 'the future' to possible 'futures' to produce new, transformative insights (UNDP, 2018).
- **We want to be active participants in shaping our future.** By coming together to question how the future is being created, through understanding emerging opportunities and risks, we can develop plans that are responsive to a changing world, and that are based on a common vision of the future that we want.

It is important to note that foresight is **NOT A PREDICTION** of the future, but rather a process of imagining many different possible futures.

Learning Exercise

What is your understanding of futures thinking?

You can test this with colleagues and yourself to understand your current comfort levels with future thinking

Consider the following questions and choose the answers that apply:

The future is,

1. Uncertain
2. Unpredictable
3. Foreseeable
4. Fixed
5. Certain
6. Controllable
7. Navigable

How comfortable are you thinking about the future?

1. Very comfortable
2. Comfortable
3. A little uncomfortable
4. Very uncomfortable

Thinking about the future for me is,

1. Too uncertain
2. Limited and a bit abstract
3. Comfortable on certain topics but not others
4. I'm confident to vision the future

When you are planning for your personal future what year do you consider the future?

1. 2021
2. 2023
3. 2025
4. 2030
5. 2040

When you are planning for the future through your work what timeframe do you work with?

1. 1 Year
2. 3 Years
3. 5 Years
4. 10 Years
5. More

What processes or tools do you use for planning for the future?

1. Personal intuition
2. Personal experiences
3. Impact pathways
4. Log frames
5. Strategic planning
6. Scenarios
7. Other

Understanding the Terminology

As with any field, foresight has its own terminology. Foresight is closely associated with the term ‘futures’. Futures refers to a wide academic and professional field inclusive of research, methods and tools that can be used to develop foresight capacity (Conway, 2014).

Unlike strategic plans that typically include a short term vision of the future, foresight approaches use a longer time frame i.e. 10 to 20 years or more, and thereby encourage thinking beyond our current conditions (Conway, 2014). It is important to note that foresight does not replace existing planning methods, but can be used in conjunction with them, and thereby enhance the planning process.

Futuring - is the act, art, or science of identifying and evaluating possible future events.

Future studies - explore how people can navigate the past and use different methods to think about and prepare for different possible futures (Forward Thinking Platform, 2014).

Foresight - involves structured tools, methods and thinking styles to enable the capacity to consider multiple futures and plan for them.

Strategic planning - tends to focus on producing tangible plans rather than on the thinking processes that informs the plans (Conway, 2014).

Regardless of the term used, those who work in this field use the future to inform action today and accept responsibly for future generations (Conway, 2014).

Questions & Answers

Is it important to reduce the definitions to exclusive ones, or could a mix be acceptable?

As you find each of everything in the different methodologies?

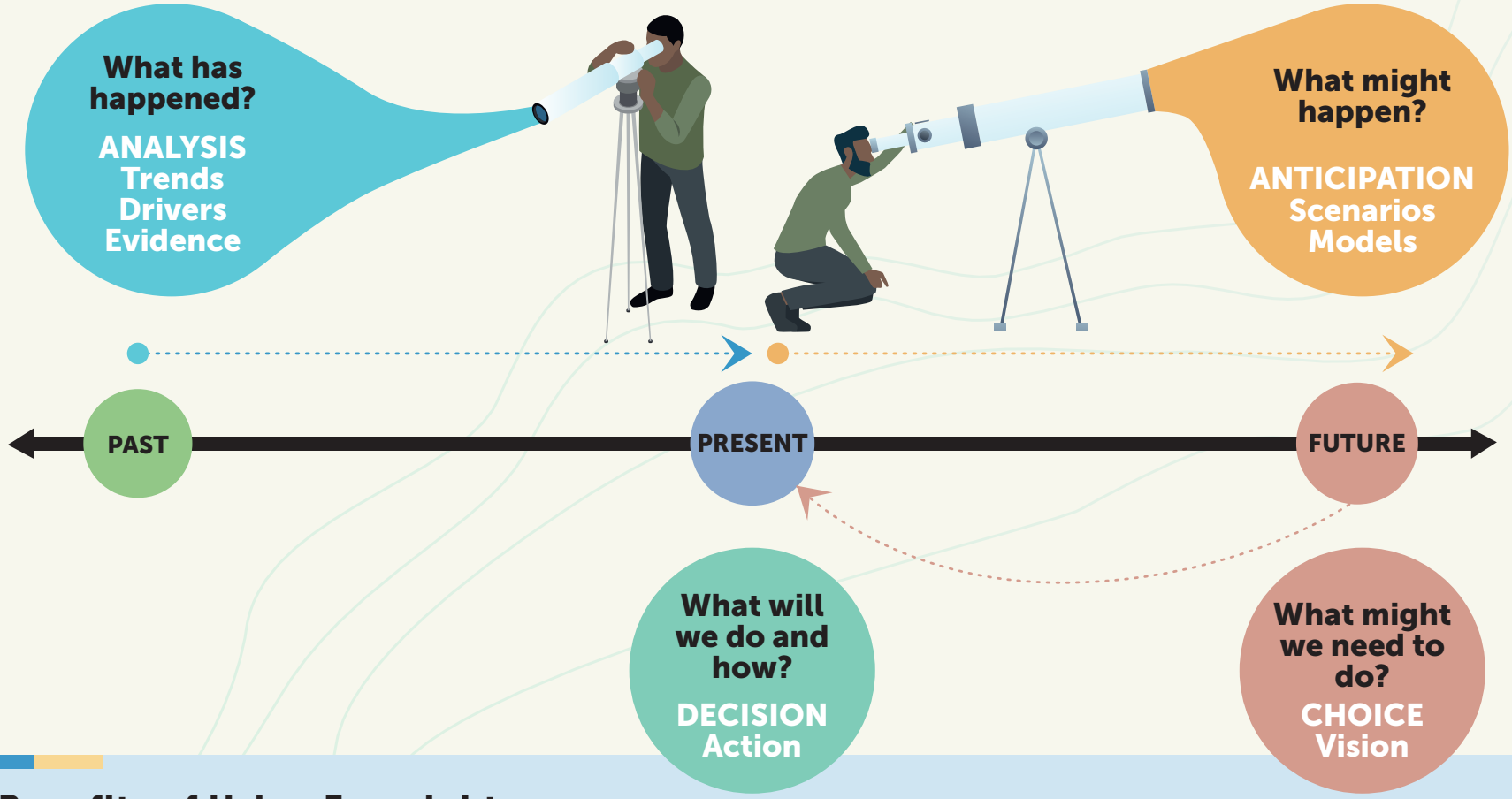
There are many different planning methods, however most planning methods take into account the current state of affairs (input, analysis and interpretation) and planning steps based on an identified desired outcome (vision) which considers what needs to happen, when, and by whom to achieve the outputs that lead to the outcome. So, there is overlap and some foresight methods fit nicely into traditional planning approaches. When we do foresight, we add more methods into the mix to better understand what is happening (analysis) and why it is happening (interpretation).

In our planning stage, we clearly articulate a vision and go deep into understanding the underlying causes and behaviours that may keep us from achieving the vision. Prospection allows us to look at multiple drivers and define a number of plausible scenarios so that our strategy takes into account the range of actions that will take our plan from being an iterative one to being a transformative one.

In response to the second question, there are different ways of doing foresight so yes, you incorporate the mix of methods that work best for your situation and often that is dependent upon the scope, the time allotted to the process, the people involved, etc.

A Representation of the Field of Future Studies

(Adapted from Forward Thinking Platform, 2014)



Benefits of Using Foresight

The **three key benefits of using foresight** can be summarised as:

- **Helping prepare for alternative futures;**
- **Helping various groups develop a common vision and purpose; and**
- **Helping transform development policy towards an agile and outward-facing approach.**

(OECD, 2018)

Why Do We Need Foresight?

Life in the **21st century is complex**, we are faced with **'great disruptive forces' such as climate change, technological advances, urbanisation and globalisation**, to name a few. These forces are not new to the world, the unique challenge is that they are occurring at the same time, and at a large scale (UNDP, 2017). The accelerating pace of the forces, how they interact, and their resounding impact is causing change that is exceedingly difficult to anticipate.

New realities are being experienced, some of which are negative, such as the Great Financial Crisis of 2008, the refugee crisis faced in Europe and the present day COVID-19 pandemic. However, the forces that cause these crises are also responsible for developmental progress (UNDP, 2017).

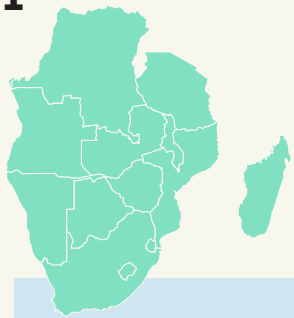
In the face of rapid change and new realities, traditional governance and planning methods are suddenly not as effective as they used to be, as planning is typically based on:

- **Predictability;**
- **Clear causality;**
- **Eliminating uncertainty;**
- **Tools that are strict and inflexible (e.g. legal and budgetary frameworks).**

This causes severe implementation problems in an uncertain and changing operating environment.

The issue is how can SADC governments identify and leverage strategic development opportunities whilst anticipating and minimising risk?

Foresight helps us adopt more resilient policies and planning tools that deal with change, unpredictable and unfamiliar futures, allowing us to change course if needed. It provides a better insight into new realities, how they might change, how they could affect collective and individual interests, and the implications for taking action (Woodhill & Hasnain, 2019). Decision makers and policy planners using the foresight process are empowered to use new ways of thinking about, talking about, and implementing strategic plans that are compatible with the extraordinarily complex and uncertain future (UNDP, 2018).



Applying Foresight in the Context of Climate Resilient Development in the SADC Region

Foresight can influence SADC's regional and member country strategies and policy development to ultimately enhance resilient development pathways, including the use of scenario-guided policy making, strategic planning, and regional prioritisation. There are numerous tools that can be used in a foresight exercise to guide SADC policies, time frames, and institutions. Such tools may include trends analysis, horizon scanning, multi-stakeholder mapping and engagement, systems thinking, causal analysis, visioning, backcasting, and scenario planning for long-term and deep uncertainties.

By using foresight tools, SADC decision makers and policy planners can strive to answer these core development questions:

- **What does sustainable and equitable economic growth look like for SADC?**
- **What role will agriculture and natural resources play in that future?**
- **What impacts will climate change have and how do we plan for these?**

Foresight is not a new concept in SADC, it has previously been applied to planning and policy development. However, there is further opportunity for governments to incorporate foresight into national development visions, anticipatory governance and strategic management, resilient policy planning, and policy and public services innovation to contribute to the realisation of visions such as Agenda 2063, 2030 Agenda and Emergent Africa (UNDP, 2017).

It is important to note, that **there is no standardised way of doing foresight, the methods, and tools you choose depend on your specific topic or theme, the scale and objective(s) o**f the foresight process and the questions you want to answer (Bourgeois, 2012). Taking the core development questions into consideration, the SADC Futures Foresight Training Series demonstrates foresight application in the context of climate resilient agricultural development in the SADC region. The foresight methods and tools chosen are therefore specific to the theme and may need to be reconsidered for appropriateness, in the context of your study.

Questions & Answers

How do we manage the overlaps in the different planning methodologies related to foresight?

There are different ways of doing foresight, but they often have methods, tools, and processes in common. So, there is an opportunity to bring foresight methods into your planning processes. Most planning methods take into account the current state of affairs (input, analysis and interpretation) and planning steps based on an identified desired outcome (vision) which takes into account what needs to happen, when, and by whom to achieve the outputs that lead to the outcome. So, there is overlap and some foresight methods fit nicely into traditional planning approaches.

Why Do We Need Foresight for Climate Resilient Agricultural Development in the SADC Region?

Photo: Iyin John Onaeko-unsplash

Achieving food security in the face of climate change is a complex public policy issue, a so called 'wicked problem'. In Africa, close to **20% of people are undernourished, and hunger is increasing in almost all regions**. The effects of malnutrition are severe, contributing to stunting and obesity, with resultant effects on quality of life and public health. According to the United Nations (UN), agricultural production will have to increase by approximately 50% by 2050 to meet population needs (FAO, n.d.). Coupled with this is diminishing land availability, increasing soil and biodiversity degradation, and more frequent and extreme weather events, which are compounded by climate change (FAO, n.d.).

In these highly uncertain and rapidly changing times, the **SADC region**, as with other regions in Africa, remains fundamentally **dependent on a resilient agricultural system and natural resource base to feed its growing population** (IFAD, 2015). Climate change poses the greatest threat to the SADC agricultural system and smallholder farmers are on the front line. Many smallholder farmers operate on marginal rainfed land that is affected by increasing water scarcity and erosion issues. Not only does climate change negatively impact agricultural production, it also affects storage, processing, and market access (IFAD, 2015).

41.2 million people

Are estimated to be food insecure in 2019 and the number is increasing
(Data for 13 SADC Member States)

Only 7% of cultivated land

In the SADC region is irrigated

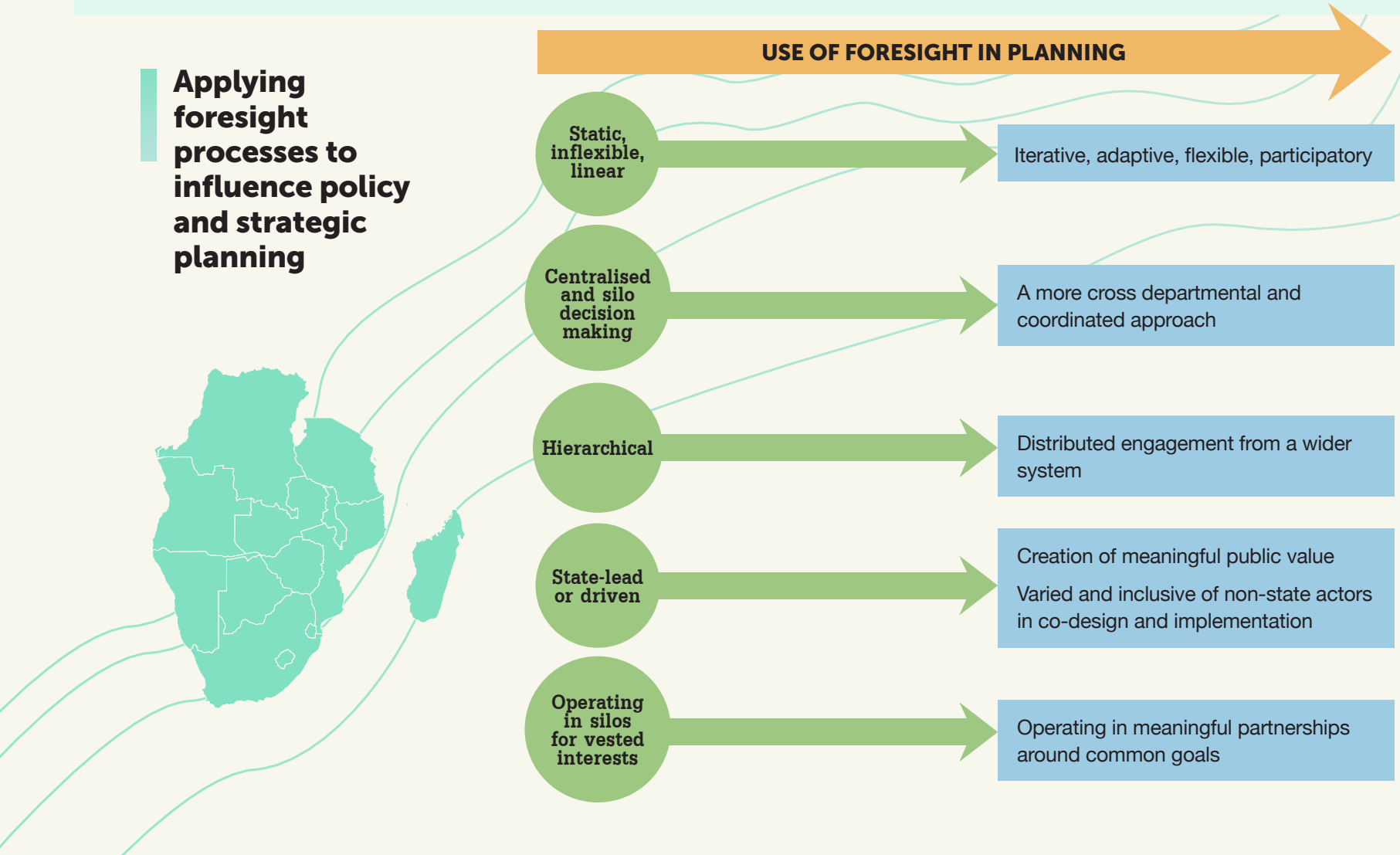
Land availability in the region is diminishing

As is soil fertility and biodiversity, this is further compounded by climate change.
(SADC, 2019)

How can foresight be used to enhance the resilience of the SADC agricultural sector to climate change, to improve future food security?

Foresight is undertaken when a country, region or organisation faces a specific challenge. It implements a process of systematic reasoning to develop 'visions', understood as possible future states of affairs that can be reached (or avoided) through action in the present. Each foresight exercise is based on its own specific premises and will have a number of objectives, functions, limitations, outcomes and benefits (European Foresight Platform, n.d.). In this light, by using the foresight process policy planners and decision-makers in the SADC region can work together through a facilitated process to systematically investigate the future so that they can create resilient agricultural strategies and policies that are action oriented and responsive to our changing climate.

Applying foresight processes to influence policy and strategic planning



How Do We 'Do' Foresight?

Foresight is not conducted by a small group of experts or academics but involves a number of different groups of actors concerned with the issue in question (European Foresight Platform, n.d.). The results of a foresight exercise are shared with a large audience from which feedback is actively sought.

Furthermore, foresight is based on the principle that the problems faced cannot be entirely understood if reduced to one dimension. Therefore, foresight provides a multidisciplinary approach that captures realities in their totality with all the variables influencing them, regardless of the type (quantitative and qualitative) (European Foresight Platform, n.d.).

Questions & Answers

Regarding inclusion of women, how best can we ensure that women are actively engaged and have equal power relations considering the gender relations in SADC countries, for example in terms of decision making on access to agriculture finance? They are often the majority in local discussions, but they do not participate. How do we address this in foresight?"

It takes specific attention to **actively engage and get the input of women** into these processes. From a trainer's/facilitator's perspective, we often work with both mixed gender groups as well as allow women to talk among themselves and provide input. Sometimes in mixed groups you may find that women get relegated to writing the cards or keeping notes.

Step 1. Make sure women are present
Step 2. Encourage women to speak (e.g. call on them)
Step 3. Create opportunities for women to work with other women

Another opportunity may be to host a meeting among powerful women working in agricultural finance and others in advance of participation in broader stakeholder gatherings.

Photo: Jessica Joye, Fintrac Inc (USAID)

Four Key Questions Foresight Exercises Aim to Answer

What might happen?

What seems to be happening?

What is really happening?

What do we need to do?

Foresight frameworks and tools help to **guide decision makers through the action-oriented approach**. The four guiding questions above form the basis of the foresight framework used in this training.

Each stage of the foresight framework consists of a **series of tools and methods** that will be applied as the toolkit unfolds.

Concepts from each stage are carried throughout the framework i.e. the framework stages should not be viewed in isolation or only applied in the order of the framework.

The set of tools and methods chosen depend on the **specific way a user may want to apply a Futures approach** and use foresight methods.

Foresight Framework

Data, evidence, knowledge and creativity

Stakeholder engagement and participation

INPUT	ANALYSIS	INTERPRETATION	PLAN	PROSPECTION	REFLECTION	STRATEGY
Context	What is happening?	Why is it happening?	What do we want to experience in the future? What might get in our way?	What might happen that we have not thought about?	What might we want to do differently?	What will we do differently?
Scope	Horizon Scanning	Systems Mapping	What might we do to get there?	Developing Scenarios	Scenario Implications	Transforming Climate Resilient Pathways
Theme or key topic	Trend Analysis	Cross sectoral and multi-stakeholder approaches	Visioning	Identify drivers and critical uncertainties	Transformation Elements	
Geopolitical boundary	Evidence		Causal Analysis	Develop plausible future scenarios	Transformational Change	
Structures & policies			Stakeholder Analysis			
Timeline			Backcasting			
Stakeholder Mapping			Pathway Development & Trade-offs			

SADC Futures
Developing Foresight Capacity for Climate Resilient Agricultural Development

Learning Exercise

When undertaking a foresight exercise the first step is to think of the key topic at hand and then apply the **four guiding questions** to improve your understanding of it. The COVID-19 pandemic provides a useful example:

We are living through the effects of the COVID-19 pandemic and it is having a large impact on how we see the future. Think back to what you expected the future to be like **BEFORE** the COVID-19 pandemic and compare that with the future you expect **AFTER** the pandemic started.

The responses given below are from the SADC Futures webinar series which was attended by participants from across the SADC region.

What seems to be happening?

Think back to what you were expecting you would be doing in the year 2020 before the COVID-19 pandemic started...

'I would've travelled to several countries for field work and attended planning workshops, and conferences.'

'I would've carried out fieldwork involving farmer interviews.'

'I started an internship, expecting to work in an office.'

What is really happening?

How different is your situation now? What has changed with the pandemic?

'Social distancing restrictions, we can't go to the field or interact with farmers.'

'No holiday.'

'…now it's just home office'!!!

What might happen?

Now think ahead to 2021, describe what you think your working environment will look like or what your personal activities will likely entail...

'The farming community will be more into saving and not expending.'

'Work environment is likely to be more virtual with less travelling.'

'Living a new normal, whatever that is going to be.'

What do we need to do?

Think back to December 2019 when you were planning 2020...what would you have done differently if you had known that COVID-19 was coming? What changes would you have made to your plans for the year?

'Should have saved more money'!!

'Would've done my field work earlier on, would've done most of my travel related activities in December-January'!!

'Would have changed my workshop schedules and set up proper tools for virtual meetings.'

Setting up a Foresight Exercise

The first stage of the foresight exercise is 'input', this is where we are developing our understanding of the chosen context using the scope method.

INPUT	ANALYSIS	INTERPRETATION	PLAN	PROSPECTION	REFLECTION	STRATEGY
Context	What is happening?	Why is it happening?	What do we want to experience in the future? What might get in our way?	What might happen that we have not thought about?	What might we want to do differently?	What will we do differently?
			What might we do to get there?			

- Scope
- Theme or key topic
- Geopolitical boundary
- Structures & policies
- Timeline
- Stakeholder Mapping

A key question we need to consider at this point is:

What is happening right now?

SADC Futures
Developing Foresight Capacity for Climate Resilient Agricultural Development

Defining Your Scope

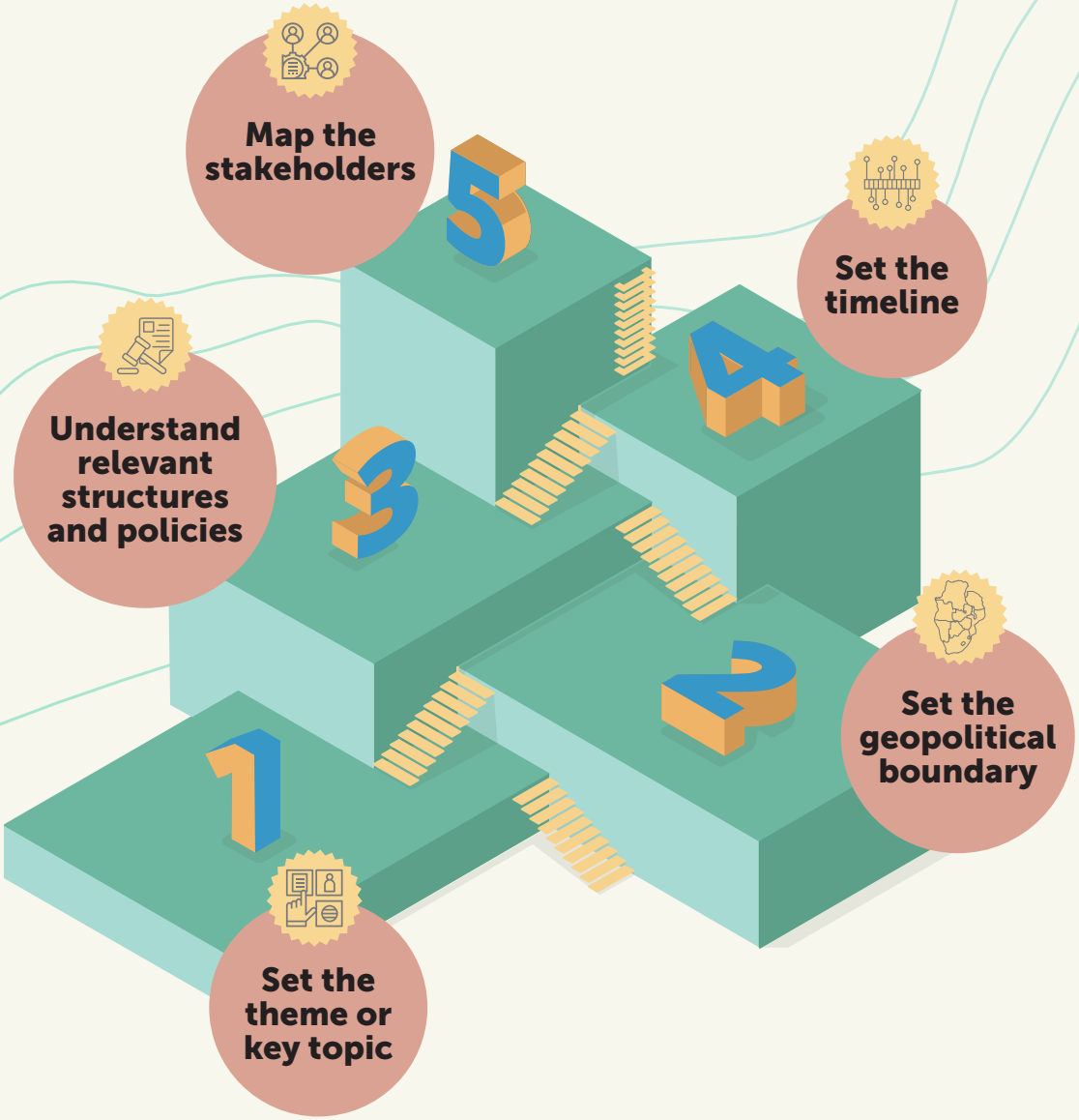
An integral component of the input stage is **defining the purpose of the foresight exercise**. The scope method includes defining what your foresight activity is intended to address as well as trying to understand the context you are planning within and for. This essentially provides the boundaries that you want to work within. However, it is important to note that the **boundaries can change as your understanding of the context deepens**.

What is the method?

Defining the purpose of the foresight exercise and what it is intended to address. Establish the boundaries within which you are working and envisioning a future.

Why apply it?

To understand the context we are planning within and for.



Step 01 Setting the Theme

'Setting the theme' is Step 1 of the scope method. This is where we consider what is happening around us. This means we need to understand as much as we can about the subject matter and the context of our theme. This involves gathering data and evidence and ensuring we can clearly define the current elements of the systems at play.

Application in the Context of Climate Resilient Agri-Food Systems in the SADC Region

The overall goal of applying **foresight techniques** in this context is to allow for planning to **reduce the vulnerability of the SADC region's agri-food systems to climate change** and retain the ability of the systems to adapt and transform, not only now but in the future.

How should we go about designing and implementing climate resilient agricultural development in the SADC region when there are so many uncertainties around how the world will unfold in the near future?

Foresight techniques that encompass **innovative policy formulation and solution design methods** give us a process for considering alternative possible futures and enable us to plan for uncertainties.

Uncertainty - is used to describe drivers we often don't know how they will emerge.

Firstly, it is important to set the theme by **investigating the context of climate resilient agri-food systems in the SADC region**. This is done by describing the status quo and identifying the drivers and trends within the sub-systems that shape the way the agri-food systems develop and respond to stressors and shocks in the future.

Furthermore, the relationships between these systems and sub-systems need to be understood and mapped out to start framing the way we think about climate resilience within the agriculture sector in a more holistic way.

Drivers - are factors that cause change, thereby affecting or shaping the future.

Trend - is a general tendency or direction of a movement/change over time e.g. increasing erratic seasonal rainfall patterns.

The **SADC agri-food systems are complex, consisting of many different interconnected sub-systems and sectors that affect outcomes such as production and food security in the region**. The agri-food systems sit within and amongst other ecological, social, political, economic systems. As the theme is complex it is important to break it down further before considering the elements and possible drivers of the systems. The theme can be broken down into two parts: 'agri-food systems' and 'climate resilience'.

Photo: Neil Palmer (CIAT)

Learning Exercise

Think of your theme...what question are you trying to answer? Is it a complex topic that needs to be broken down further?

Questions & Answers

How important is it to differentiate between direct and indirect drivers?

To really **make a transformative change in the system**, one must look beyond the direct drivers (e.g. land management on land degradation) and look at options to intervene in what indirectly influences that driver (e.g. tree and land tenure, information and awareness, need for short term production, and mindsets).

While we will not get too detailed in this course on differentiating between **direct and indirect drivers**, we will be looking at systems as well as carrying out **causal analyses** to unpack the underlying causes which can be direct and indirect.

Agri-Food Systems

Photo: Sonja Leitner (ILRI)

The main aspect of the chosen theme is agriculture. This requires considering:

What is happening within the agricultural system?

Can it be unpacked further?

What are the core elements and how do they relate to external systems and drivers of change e.g. technology, politics, natural environment, economy, and socio-cultural environment?

What data do we need to provide evidence to our question-what is happening?

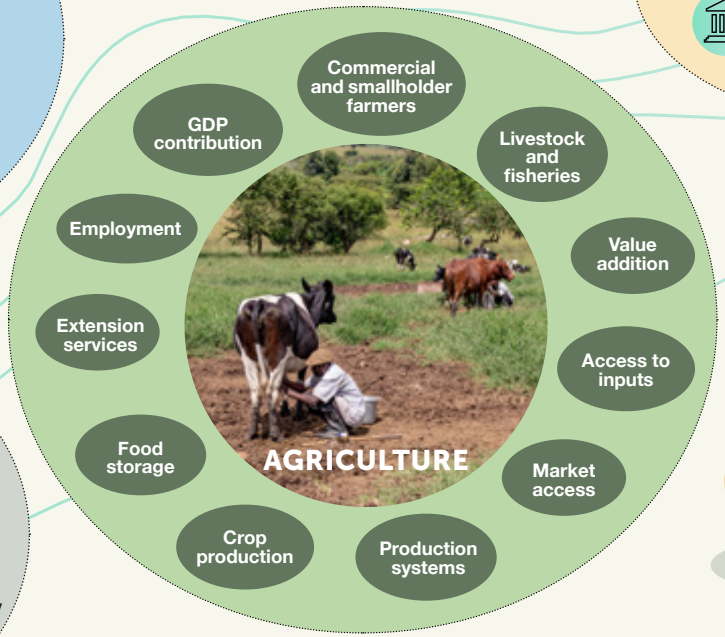
The theme suddenly seems a bit more complex, it is not one dimensional. (A useful foresight tool for unpacking your theme is '**systems mapping**' which is covered under Module 2.)

Agri-Food Systems

TECHNOLOGY
- Communications & Technology
- Climate Information
- Insurance and Risk

ECONOMIC
- Infrastructure
- Finance
- Markets
- Investment
- Trade
- Wealth Distribution

POLITICAL
- Governance
- Regulations
- Tenure

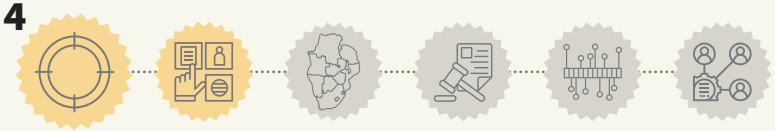


SOCIO-CULTURAL
- Population Demographics
- Health
- Labour availability
- Education

ENVIRONMENTAL
- Tourism
- Energy
- Natural Capital

What different elements of your theme do you need to consider?

What external systems and drivers of change could affect your system in question?

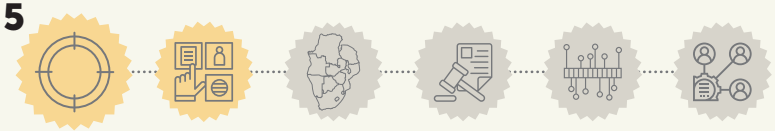


Learning Exercise

Using a white board or a large piece of paper, start to write down your thoughts on what makes up, affects, or is affected by, the system at the core of your theme. Group the external systems and drivers of change according to categories for example technology, economic, political, environmental, or socio-cultural. The agri-food systems diagram provided on the previous page and the image provided and the associated questions can help to guide your understanding of this process.

Now, let us break down the external systems and drivers further. For example, let us look at 'energy' within the 'environmental category' and start to unpack it. We could ask ourselves questions such as:

- What is important to understand in terms of regional energy?
- Who has access to it and is there a divide between rural and urban access?
- How does access affect agricultural production?
- What is the regional demand for electricity like and is it changing?
- How is the region's electricity generated?
- Is it from predominantly non-renewable resources such as coal?
- How does this impact on climate change and ultimately agricultural production?
- What does the non-renewable energy sector look like?
- How is it changing?
- Is it affordable?



Learning Exercise

Try to unpack the 'population demographics' and 'infrastructure' categories further. You can use the examples below to prompt you.

Energy

- Access
- Electrification
- Demand growth
- Access to off grid solar technology

Population Demographics

- Migration
- Growth
- Age
- Urbanisation

Infrastructure

- Roads
- Dams
- Ports (trends, plans, status)
- Export zones
- Industrialisation trends/ plans

We can now move on to the second part of the theme, **'climate resilience'**. To unpack climate resilience, we are first going to consider **'climate change'**.

Climate Change

Climate change - is a **change in the state of the climate** that can be identified by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer (IPCC, 2012).

Climate change may be due to natural internal processes or external forcings, or to persistent anthropogenic changes in the composition of the atmosphere or in land use' (IPCC, 2012). A key question to ask at this point is:

What is the impact of climate change on the productivity of agri-food systems?

Firstly, you need to **identify the different agricultural production activities** e.g. cropping, livestock rearing, and fisheries. The next step is to brainstorm how future climate change could affect these activities.

Photo: Geraldine Klarenberg (ILRI)

You could ask questions such as:

What impacts will change in ambient temperature, rainfall, extreme weather events, soil erosion and pests and diseases have?

How will climate change affect post-production activities such as harvesting, storage, and transportation?

The results of the brainstorming session need to be documented, such as in the figures on the next page.

Production Activity	Examples of Climate Change Impacts
Growing Crops	Reduction in yields and quality of produce
Livestock	Reduced availability of grazing in rangeland systems
Fisheries	Changes in ambient sea temperatures reducing fish stocks
Food Safety	Increase in infectious disease and mycotoxins
Overall System	Reduction in water availability and loss of soil fertility
Harvests	Post-harvest losses, difficulty in scheduling harvests, increase in pests and diseases
Storage	Low rainfall affecting hydro energy production needed to power cold chains
Transportation	Damage to infrastructure due to flooding
Marketing, Retail and Consumption	Limited agricultural produce with a high demand resulting in increased food prices

What other impacts can you think of?

On the other hand, we also need to consider which processes in the agri-food systems release emissions that contribute to climate change. These could again be categorised according to production and post-production e.g. production - fertilisers, animal feed, agricultural practices, and post-production - processing, packaging, transportation, refrigeration, and consumer waste.

Climate Resilience

Now that we have unpacked **'climate change'** and how it affects, or is affected by, the **agri-food systems** we can investigate **'climate resilience'**.

Climate resilience can be seen as a set of capacities that enables a system (such as a farm, or a community / district, country or region) to prevent or respond to climate shocks and stresses. As mentioned previously, it is the ability of a system to 'bounce back' from the impacts of climate-related stresses or shocks.

In this light, the next step is to unpack **climate adaptative capacities of agri-food systems in the SADC region**.

Climate adaptative capacity is a **combination of the strengths, attributes, and resources available to an individual, community, society, or organisation** that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities (IPCC, 2012).

Photo: Brigitte L. Maass (ILRI)

Firstly, group the adaptive capacities into **key categories** for example **infrastructure, governance, livelihoods systems and farm systems, people, and ecosystems**. Next, consider the following:

What parts of the agri-food systems can be adapted to enhance resilience to climate change and how?

Capacities to build a climate resilient agriculture system

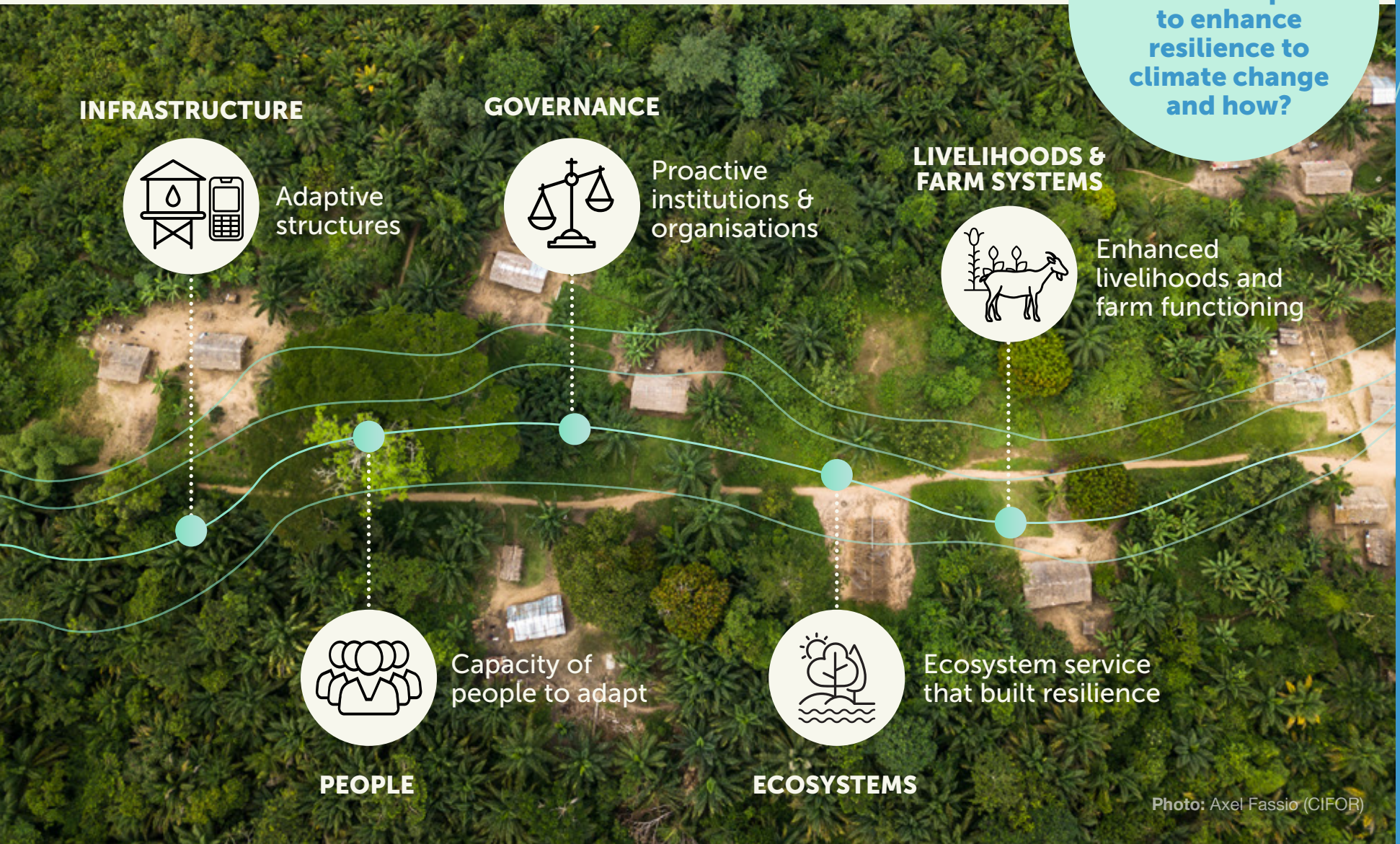


Photo: Axel Fassio (CIFOR)

Examples of adaptive capacities for enhancing climate resilience within agri-food systems. This is expanded upon over the following pages.

INFRASTRUCTURE

Adaptive structures resilient to shock weather events e.g. increased water storage capacity for times of drought or coastal town infrastructure for handling flooding associated with cyclones.

PEOPLE

Capacity of people to adapt e.g. harvesting locust swarms in East Africa for processing as chicken feed.

GOVERNANCE

Proactive institutions and organisations e.g. capacity of local institutions to plan and prepare for extreme weather events.

ECOSYSTEM

Ecosystem services that enhance resilience e.g. wetlands provide a buffer in the case of flooding.

LIVELIHOODS & FARM SYSTEMS

Enhanced livelihoods and farm functioning e.g. alternative income sources from off-farm employment or diversification of agricultural produce.

Themes and associated adaptive capacities that could be implemented to enhance climate resilience within agri-food systems.

INFRASTRUCTURE

Physical Infrastructure

- Maintenance, early warning systems
- Land under irrigation
- Management of natural infrastructure e.g. wetlands, aquifers
- Water storage capacity
- Structural adaptation e.g. seawalls

Information, Knowledge & Technology

- Government expenditure on rural extension
- National statistical systems
- Climate information monitoring systems
- Number of researchers in science and technology (S&T), research and development (R&D)
- Level of tertiary education
- Mobile phone penetration
- Fixed broad-band internet subscribers
- Government expenditure on R&D

Photos: World Agroforestry (Left) Neil Palmer-CIAT (Right)

PEOPLE

Socio-cultural

- Values (equity, intergenerational responsibility, commitment to reducing climate change)
- Social awareness (of climate change, climate events, climate impacts)
- Level of health (especially malnourishment)
- Access to water/sanitation
- Gender equality
- Level of education

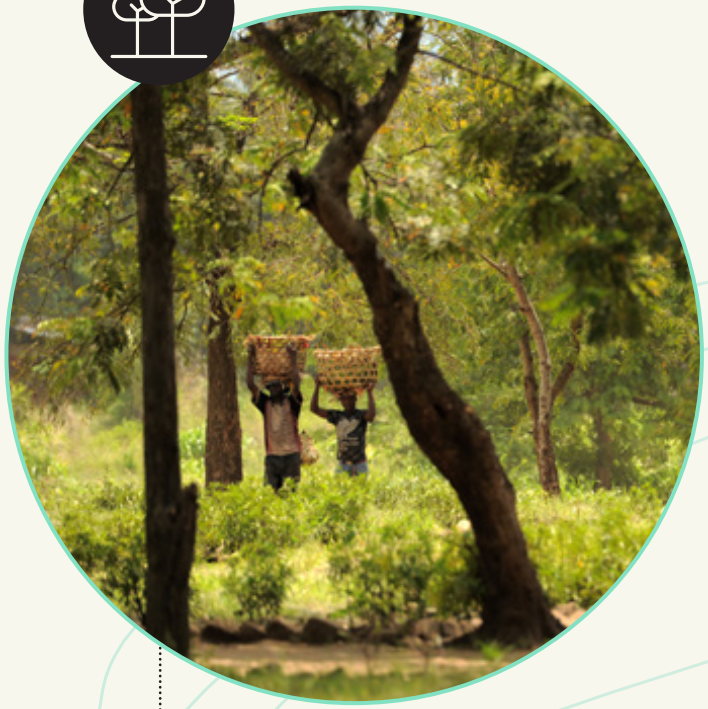
Human Innovation

- Government expenditure on rural extension
- Government expenditure on R&D
- Mobile phone penetration
- Fixed broad-band internet subscribers
- Climate information monitoring systems
- Level of tertiary education
- Number of researchers in S&T and R&D
- National statistical systems

Photos: Olivier Asselin-FAO (Left) Neil Palmer-CIAT (Right)

ECOSYSTEM

Natural Resources



- Managing water availability and quality
- Diversity of crops / livestock / land use patterns
- Practice of sustainable land management (conservation agriculture (CA), climate-smart agriculture (CSA), agroecological approaches)
- Level of biodiversity
- Functioning of ecosystem services
- Intact forested areas and trees on farms

Photos: Daniel Hayduk (FAO)

GOVERNANCE

Finance

- Ability to access climate finance
- Institutions and systems for managing funds, resource mobilisation and effective delivery
- Household access to financial institutions and services
- Household insurance coverage

Governance

- Climate mainstreaming within policies and strategies
- Level of decentralisation and capacity of local institutions
- Flexibility within policy, legal, and institutional structures
- Land tenure policies
- Effective management of shared and cross-boundary resources
- Social networks (farmers associations, Civil Society Organisations (CSOs) , cooperatives, social support systems)

Photos: C. Schubert-CCAFS (Left) Aulia Erlangga-CIFOR (Right)

LIVELIHOODS & FARM SYSTEMS

Economy

- Flexible economic system to absorb internal migration, seasonal migration
- Off-farm employment opportunities
- Diversity of the economy
- Household savings and income

Agricultural Assets

- Level of agricultural commercialisation/market integration
- Grain stores and livestock reserves
- Access and penetration of modern farming technologies, resilient crop varieties, fertilisers, irrigation

Now that the theme is unpacked, we should have a more in-depth understanding of the context within which we are working.

Photos: S.Kilungu-CCAFS (Left) Neil Thomas-EADD (Right)

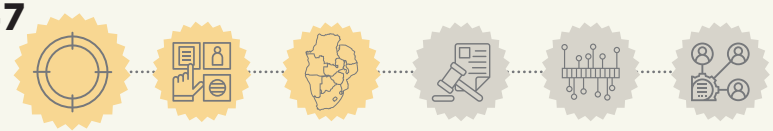
Step 02 Setting the Geopolitical Boundary

High-level gathering of data, knowledge, and evidence is important in understanding the context of the chosen theme. The next step of the scope method, **Step 2, is to set the geopolitical boundary**. It is important from the outset to clearly **define the scale of the intended foresight exercise**. Are we zooming in to a specific project zone, or even a department in a Ministry, or are we scaling up and looking at a broader system with multiple layers and actors?

At what scale does the theme occur i.e. is it at a global, continental, regional, national, district or project level?

It is also important to **understand the dynamics of the scale** that you are working at, to do this you need to know **what is contained within your selected boundary**, this information can be split into categories such as:

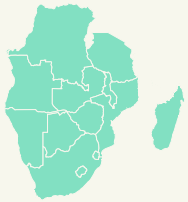
- **Geo-political** e.g. geographical situation of a country relative to other countries (and to the sea), topography;
- **Socio-cultural** e.g. homogenous or heterogenous populations, rural-urban divide, migration;
- **Environmental** e.g. diverse farming systems, natural resource availability, climatic conditions; and
- **Economic** e.g. statistics related to Gross Domestic Product (GDP), poverty, inequality.



Learning Exercise

To understand the dynamics within your geo-political boundary, print out or draw a map of the area covered by your theme.

1. Identify characteristics that are relevant to your theme.
2. Use information sources such as websites, knowledgeable persons, or books to provide detail on the characteristics of the area in question.
3. Add this information to the map so that you can visualise it. See the map on the following page as an example of how to do this.



Application in the Context of Climate Resilient Agri-Food Systems in the SADC Region

In the context of SADC climate resilient agri-food systems, the SADC regional boundary was selected. To enhance **understanding of the region we investigated why it was formed and when**. SADC is a regional economic community that was founded in 1992, it contains 16 member countries. The purpose of SADC is to facilitate regional integration, trade, and financial harmonisation, for a more competitive region.

Regional characteristics of interest in the context of the chosen theme include **population dynamics, land use and composition, poverty, food security** and **agricultural** systems.

The **SADC region** has a collective **population of approximately 345 million** people spread across a vast area.

The **population is young (55%), predominantly rural (55%) and poor** (43 million people living in acute poverty).

The average **GDP growth rate** is **2.9% annum**, **38% of the land is agricultural** and **41% is forested**.

Other examples of characteristics that could be considered include: shared water systems e.g. the Zambezi River system, shared ecosystems e.g. the forests in the Chimanimani Transfrontier Conservation Area between Zimbabwe and Mozambique, as well as regional infrastructure such as the road and railway networks that connect neighbouring, member countries.

What does the data tell us about the region?

The **socio-economic indicators** highlight the inherent **vulnerabilities, challenges**, and **opportunities** in the **geographical scope area**.

Population Size
345 million

Rural Population
55% of total

Youth Population
55% of total

People Acutely Food Insecure
43 million

GDP Per Capita
US$2,080

Average GDP Growth Rate
2.9% per annum

Agricultural Land Area
38% of total

Forested Area
41% of total

To develop a more **detailed understanding** of the region when envisioning potential future states, **we need to appreciate the national and local level differences, circumstances, priorities, and climate change impacts as each country** within the **SADC region** differs vastly from its neighbour, whether it be physically, biologically, socially, technologically, politically, or economically.

Learning Exercise

Gathering information on each country requires further research, this can be done using online resources, knowledgeable persons, or books.

Again, it is useful here to print out or draw a map and add annotations to understand the different characteristics and where they occur.

For example, a small island state such as Mauritius would likely generate large portions of its GDP through its tourism and fishery sectors. Or as noted on the map provided, South Africa (the strongest economy in SADC) has lower poverty levels than Madagascar.

MADAGASCAR

- Agricultural Land Area: 71.2% of total
- Forested Area: 21.4% of total
- Agricultural GDP Contribution: 3.4%
- Poverty: 81% of people earn less than $1.25 per day
- People Acutely Food Insecure: 44%

SOUTH AFRICA

- Agricultural Land Area: 79.8% of total
- Forested Area: 7.6% of total
- Agricultural GDP Contribution: 2.2%
- Poverty: 18.9% of people earn less than $1.90 per day
- People Acutely Food Insecure: 29.2%

Gathering information on your geographical area is an important step towards building a desired future, by carefully looking at what leverage points one needs to tackle to create the change we want. In the context of the chosen theme, it is crucial to consider the diversity of the region such as the farming systems, climate resilience, and changing weather patterns (temperature and rainfall).

Information gathered could include maps such as the farming systems map to the right. Other maps could be collected to understand weather systems, rainfall, and temperature patterns. The data and maps gathered for understanding the geo-political boundary and the dynamics within it provide 'evidence' for the foresight exercise.

Now that we have unpacked the geo-political boundary and have a **better understanding of the internal dynamics and member country diversity**, it should make sense as to why each country has different development plans and strategies.

Figure 1.1 The farming systems of Africa.

Source: GAEZ FAO/IIASA, FAOSTAT, Harvest Choice and expert opinion.

Note: The map refers to the year 2015; the island and the urban and peri-urban farming systems were not mapped.

Step 03 Understanding Relevant Structures and Policies

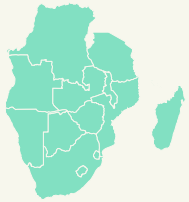
The next step, **Step 3, of the scope method**, is to develop an understanding of the policy environment and governing structures at play, as foresight strategies are typically built on existing structures.

Learning Exercise

This means thinking about your theme and identifying the institutions and key players in planning and decision making, and at what level(s) (global, continental, regional, national, provincial, project level) they are relevant to your objective.

This step may require further information gathering using search engines or knowledgeable persons. It is important to pay attention to the publishing date, to determine the most recent policy and structural information.

Draw the different institutional levels on a piece of paper and indicate with arrows how they feed into each other. Annotate the diagram with information on key players such as those involved in decision making or policy implementation.



Application in the Context of Climate Resilient Agri-Food Systems in the SADC Region

Climate change and agriculture related visions and policies occur at and transcend multiple scales (global, continental, SADC, member state, provincial and local). Although the scope of this exercise focuses on the institutional levels of the SADC region and member countries, their respective policies and programmes feed into overarching continental and global aspirational visions.

For example, at the global level, the **United Nations Sustainable Development Goals (UN SDGs) provide aspirational targets relevant to future agricultural development in SADC**. These include:

These goals occur at the highest decision-making level, they are aspirational and long-term in nature. They seek a voluntary commitment from member countries (of which SADC countries are parties to) around the world and work towards a common vision. A similar global example is the **UNFCCC Paris Agreement on Climate Change**. Relevant examples of implementing agents for the **UN** include the **World Food Programme, the Food and Agriculture Organization (FAO)** and the **International Fund for Agricultural Development (IFAD)**.

At the continental level, the **African Union (AU)** strives for regional cooperation at a broader scale than SADC. The **AU Agenda 2063** is an example of a climate change and agri-food systems related vision to which SADC members are a party to. Another example which involves the SADC member countries is the **AU's Comprehensive African Agricultural Development Programme (CAADP)**. These AU agendas and programmes feed into the global level visions mentioned previously as well as provide aspirational goals for the different African regions to aim to meet. The implementing agent for the AU's agriculture development and climate change related programmes is the **New Partnership for Africa's Development (NEPAD)** Planning and Coordinating Agency.

Examples of overarching global and continental aspirational visions and implementing agents relevant to climate resilient agri-food systems in the SADC region are provided in the diagram on the next page.

GLOBAL LEVEL GOALS

SUSTAINABLE DEVELOPMENT GOALS

United Nations Climate Change

UNFCCC Paris Agreement on Climate Change

CONTINENTAL LEVEL GOALS

Agenda 2063 The Africa we Want

AU Agenda 2063 - Comprehensive African Agricultural Development Programme

REGIONAL LEVEL GOALS

SADC Vision 2050
RISDP 2020-2030
SADC Climate Change Strategy and Action Plan
Regional Agricultural Policy

NATIONAL LEVEL - POLICY EXAMPLES

MOZAMBIQUE'S - Agricultural Policy and Implementation Strategy (1995)
SOUTH AFRICA'S - National Climate Change Response Policy (2011)
ANGOLA'S - National Strategy for Climate Change (2008)

We then consider the regional level, which includes examples such as **East African Community (EAC), Economic Community of West African States (ECOWAS) and SADC**. The SADC region is specific to the scope of this foresight exercise. At this level we find important development visions such as the SADC Vision 2050 and the Regional Indicative Strategic Development Plan (RISDP) 2020-2030.

The RISDP is a 10-year road map that provides a strategic agenda for regional development and seeks to find common development aspirations and priorities for member countries inclusive of the thematic areas of climate change and agriculture. Other climate change and agricultural visions specific to the SADC region include the Climate Change Strategy and Action Plan 2015-2020 and the Regional Agricultural Policy (RAP) of 2014. These visions and plans feed into the continental level visions above as well as provide aspirational goals for member countries to strive to meet.

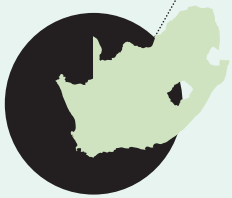
Examples of SADC visions and implementing agents relevant to regional climate resilient agri-food systems are provided in the diagram below.

SADC VISION 2050
RISDP (2020-2030)

SADC Climate Change and Agricultural Visions
(Climate Change Strategy and Action Plan and Regional Agricultural Policy)

National Climate Change and Agricultural Strategies and Policies

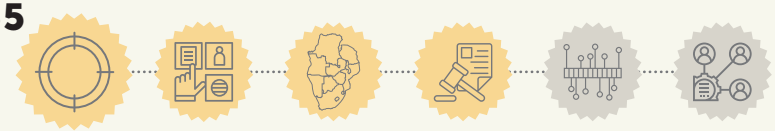
MOZAMBIQUE'S
Agricultural Policy and Implementation Strategy (1995)



SOUTH AFRICA'S
National Climate Change Response Policy (2011)

ANGOLA'S
National Strategy for Climate Change (2008)

As part of Step 3 of the scope method we need to determine who defines the rules and who the key players in planning and decision making are.



Learning Exercise

This step requires further information gathering using search engines or knowledgeable persons.

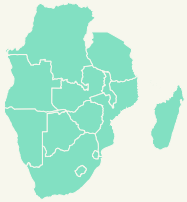
Again, it is important to pay attention to the date when the information was published, to determine the most recent structural information. It is recommended that you draw or print out organogram structures relevant to your theme to visualise where the key players sit.

Highlight areas on the organogram that are of interest in the context of your theme.

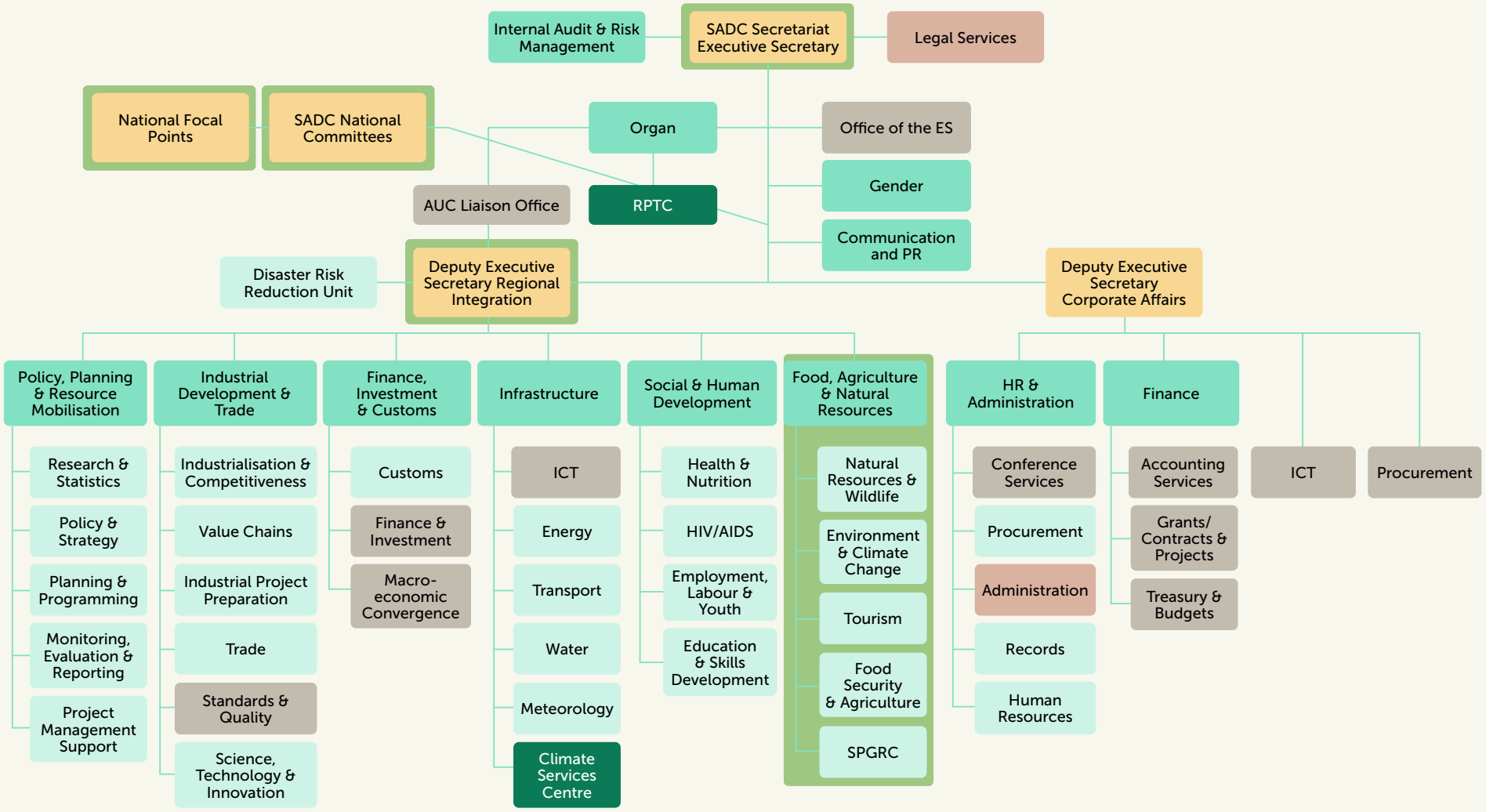
The **SADC structure is split into two functions, steering (decision making at the highest level)** and **operational (where implementation occurs)**. The structure we are interested in for the purpose of the theme is the operational function which includes the SADC secretariat, directorates and associated thematic units that they are responsible for.

More specifically, we need to **focus on the Food, Agriculture and Natural Resources Directorate (FANR)** and the associated thematic areas of natural resources and wildlife, environment and climate change, food security and agriculture and the **SADC plant genetic resource centre (SPRGC)**.

The FANR is responsible for the development and facilitation of agricultural and climate change related plans and policies for the region. However, other directorates such as 'Infrastructure' also house thematic areas of interest to the theme for example, energy, water, and transport development. We need to know where the thematic units relevant to the theme are positioned so that we know who makes the decisions and who to include in the foresight process.



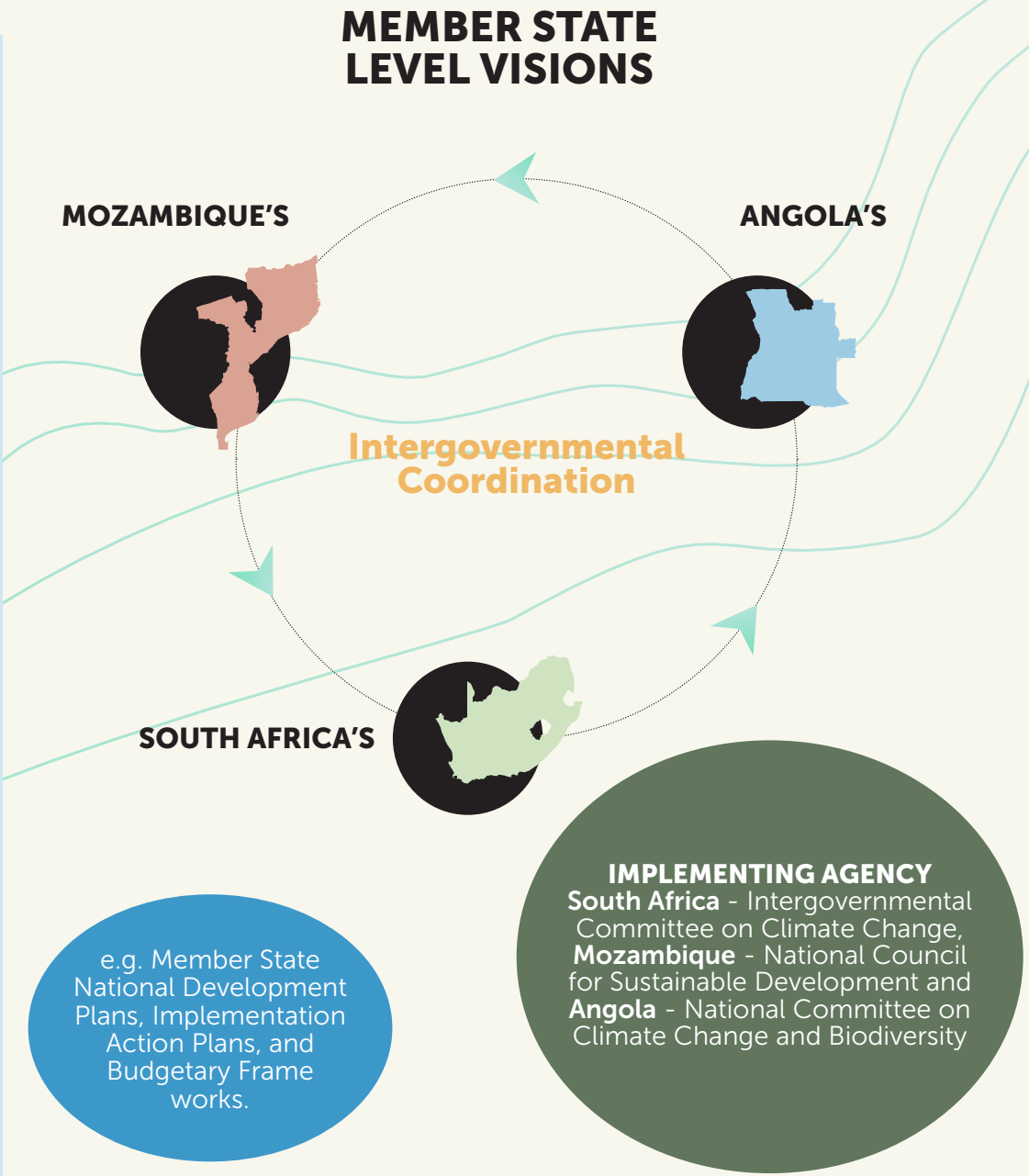
SADC Organisational Structure (SADC, 2017)



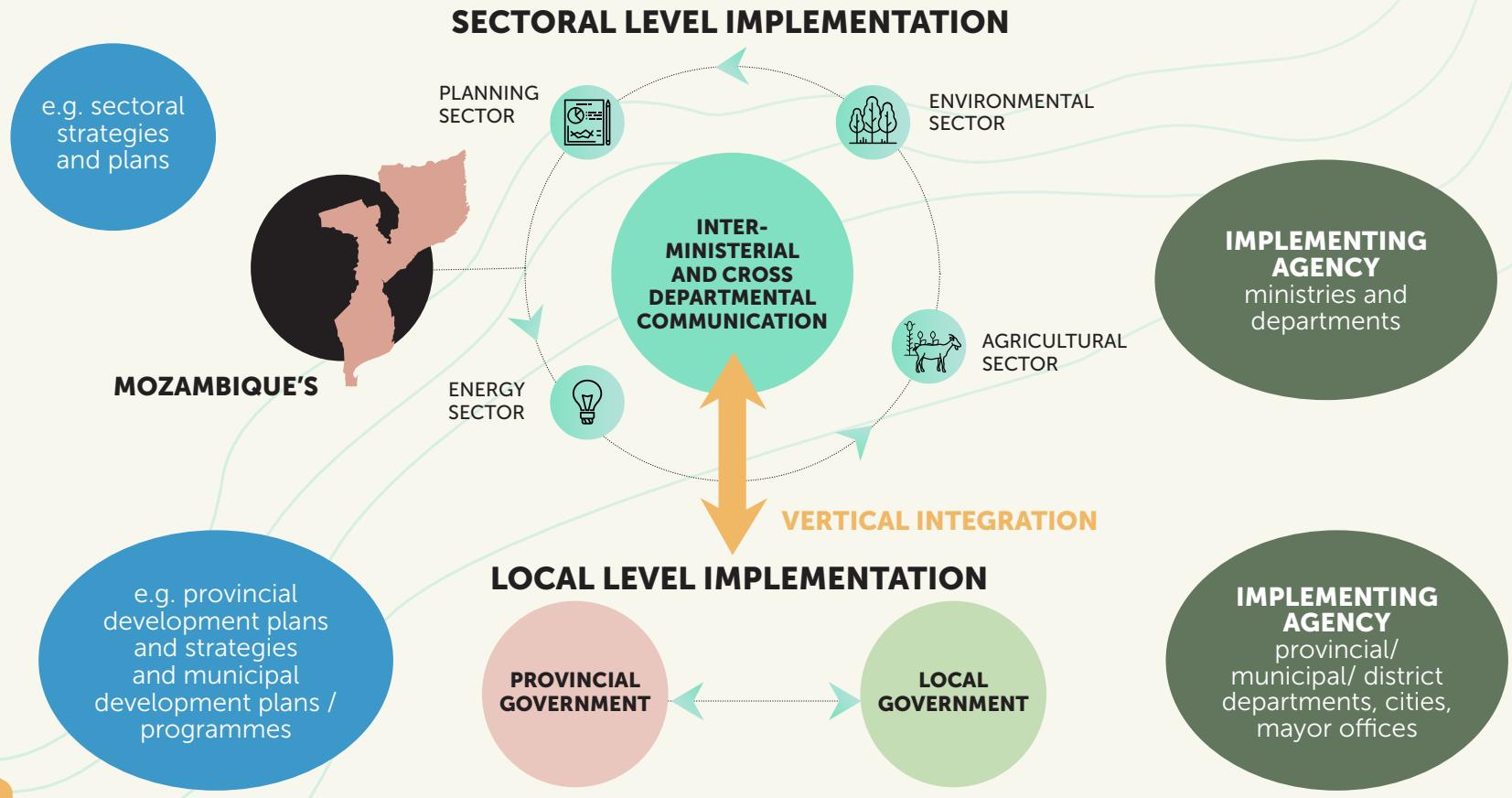
As we move down another level, we consider the SADC member country level. **Each member country has their own national vision as defined in their respective National Development Plans and accompanying Implementation Action Plans and Budgetary Frameworks**. Also, it is at this level that you would find the **Nationally Determined Contributions (NDCs)**, which are policies that domesticate the Paris Agreement.

The strategic plans at this level are short, detailed and are specific to the country in question. **The implementing agents for climate change matters vary by the country** for example South Africa's mandated body is the Intergovernmental Committee on Climate Change and Angola's is the National Committee on Biodiversity and Climate Change. All the member country national development plans speak to the SADC level visions, which in turn feed into the continental and global visions.

Examples of member country plans and implementing agents relevant to **climate resilient agri-food systems are provided in the diagram on the right**.



The last layers to consider, when attempting to understand the structures and policies relevant to the theme, are the **sectoral and local levels**. These levels are crucial for implementation. They include the **sectoral strategies and plans** into which provincial and **municipal development or local action plans feed**. Sectoral strategies and plans are aligned with the overarching national visions. Key implementing agents at the sectoral level include ministries and departments and at the provincial or local level they could comprise district/ municipal departments or mayoral offices. Examples of sectoral and local level plans and implementing agents are provided in the diagram below.



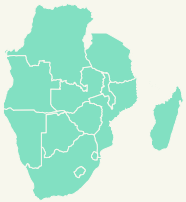
Now you have a better understanding of the complex structures and policies relevant to SADC climate resilient agri-food systems, how they consist of multiple layers that feed into each other and how they incorporate numerous decision-making and implementation-level personnel. **Unpacking existing policies and structures to understand them is important in determining their relevance and applicability** to the futures envisioned during the foresight exercise.

Step 04 Setting the Timeline

Still within the scope method of the foresight process, the next step is to choose a time frame relevant to the theme. **Foresight planning is often based on the time frames of existing strategic plans or policies**.

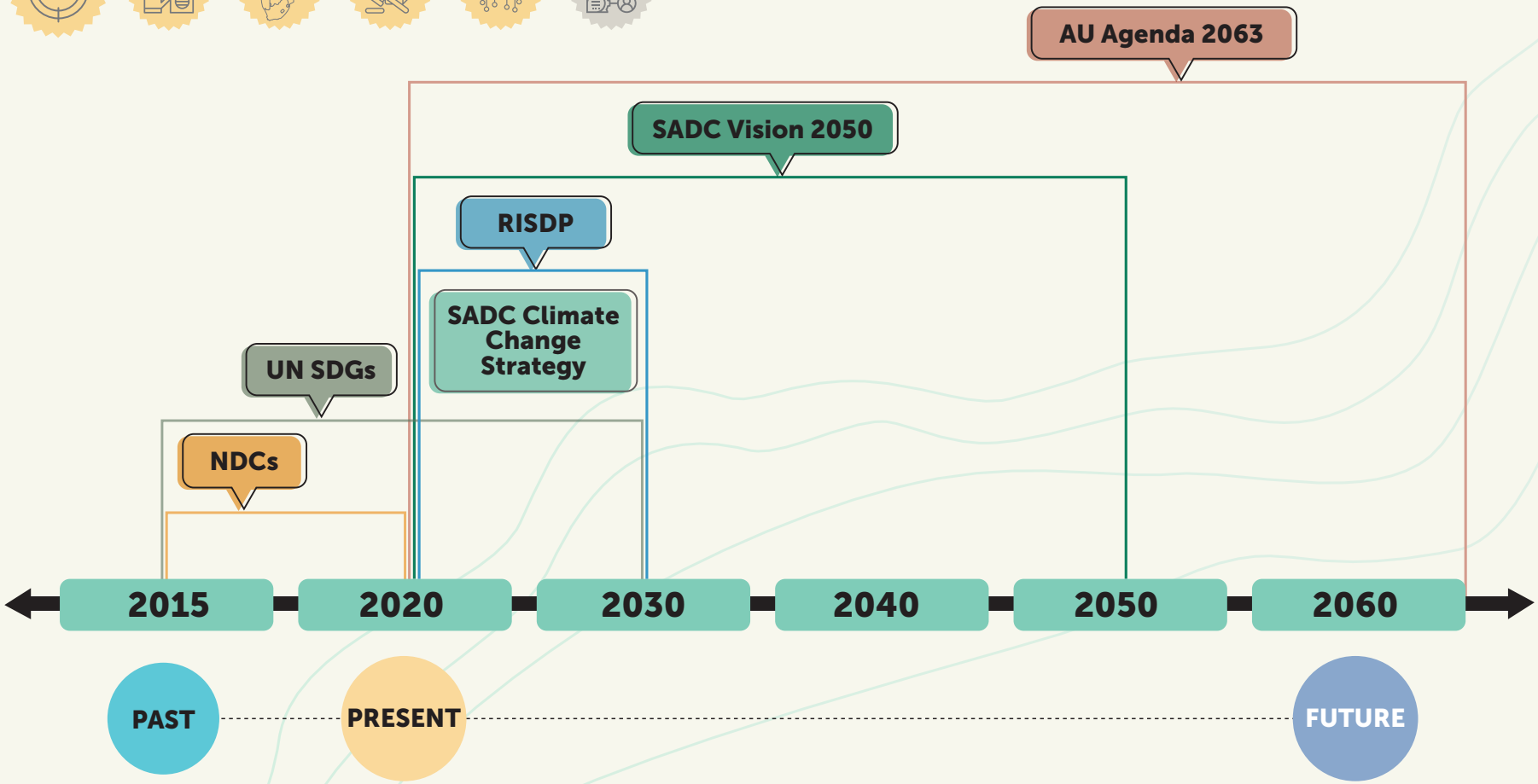
Learning Exercise

Now that you have gathered information on the various visions, policies and plans relevant to your theme, draw a timeline on a piece of paper and display their different time frames and how they overlap. Which time frame best suits your theme?



Application in the Context of Climate Resilient Agri-Food Systems in the SADC Region

There are **multiple existing time frames to consider** in the context of **climate change and agricultural development in the SADC region**, see the time frame illustrated on the following page. These time horizons provide us with the **freedom to think about alternative futures**.



The time frame for the chosen theme could be based on the **UN's SDGs 2020-2030**, the **SADC RISDP 2020-2030**, the **SADC Vision 2050**, or the overarching **AU Agenda 2063**.

Which strategic plan or policy do you think the SADC climate resilient agri-food theme should be based on?

The existing plan and associated time frame determined to be most **relevant to the SADC climate resilient agri-food theme** is the RISDP. The **RISDP is one of the most important strategic documents for the SADC region** with a time frame that extends to 2030.

Step 05 Mapping the Stakeholders

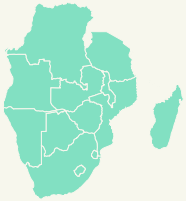
The **final step** of the scope method is '**stakeholder mapping**'. This is the process of **gathering information about the stakeholders** that are important to include in the foresight process. Stakeholder mapping is an exercise that enables us to **understand who the main actors are in the theme and how they relate to and influence one another**.

Questions & Answers

What is the ideal stakeholder composition?

It is most important to clarify your theme and the **type of system** (e.g. community production for food security, policy development for increasing green jobs) you are working on. You can use **system mapping and stakeholder mapping** (Module 2) to identify key actors and look at **causal relationships** around key issue areas to identify key stakeholders to be involved in implementation. We are not inviting stakeholders just to have many actors in the room, we can work to understand those stakeholders that will be more strategic in terms of representation.

Bringing stakeholders to the table has its own transaction costs, but if you can get strategic stakeholders, what we do know from a trainer's/facilitator's vantage point, is the more diverse the stakeholders, the more perspectives and the more creativity. Think about the **perspectives** needed and the **potential relationships** you can be building in the foresight process.



Application in the Context of Climate Resilient Agri-Food Systems in the SADC Region

The **key groups of stakeholders** identified that are relevant to the theme include:

- GRASSROOTS/ COMMUNITY-BASED ORGANISATIONS
- COMMERCIAL/ PRIVATE PLAYERS
- FINANCIAL INSTITUTIONS
- REGIONAL ECONOMIC COMMUNITIES
- GOVERNMENT
- MULTILATERAL ORGANISATIONS
- MEDIA AND JOURNALISTS
- SCIENTIFIC COMMUNITIES & ACADEMIA
- MANAGERS OF LOCAL RESOURCES & LABOURERS
- CIVIL SOCIETY

The stakeholder group list needs to be continuously reevaluated, by asking questions such as:

Who needs to be at the table? Who has been excluded?

Who needs to be emphasised based on influence?

Each stakeholder group plays an essential role for example, scientific communities generate knowledge, evidence-based information and bridge the science-policy interface. Government's role includes, but is not limited to, policy and legislation development, leadership and strategic decision making.

What roles do you think the stakeholders relevant to your theme would play?

Commercial / Private Players

Partnerships, innovation, economic perspectives, commercial resources

Media and Journalists

Advocacy, information sharing, awareness building, alternative perspectives

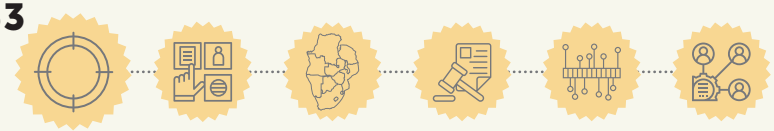
Civil Society

Advocacy, information sharing, awareness creation, advisory, capacity building, network building, change agents, voice of the people, affected and interested people

Financial Institutions

Project finance, understanding long-term investment risk, market solutions

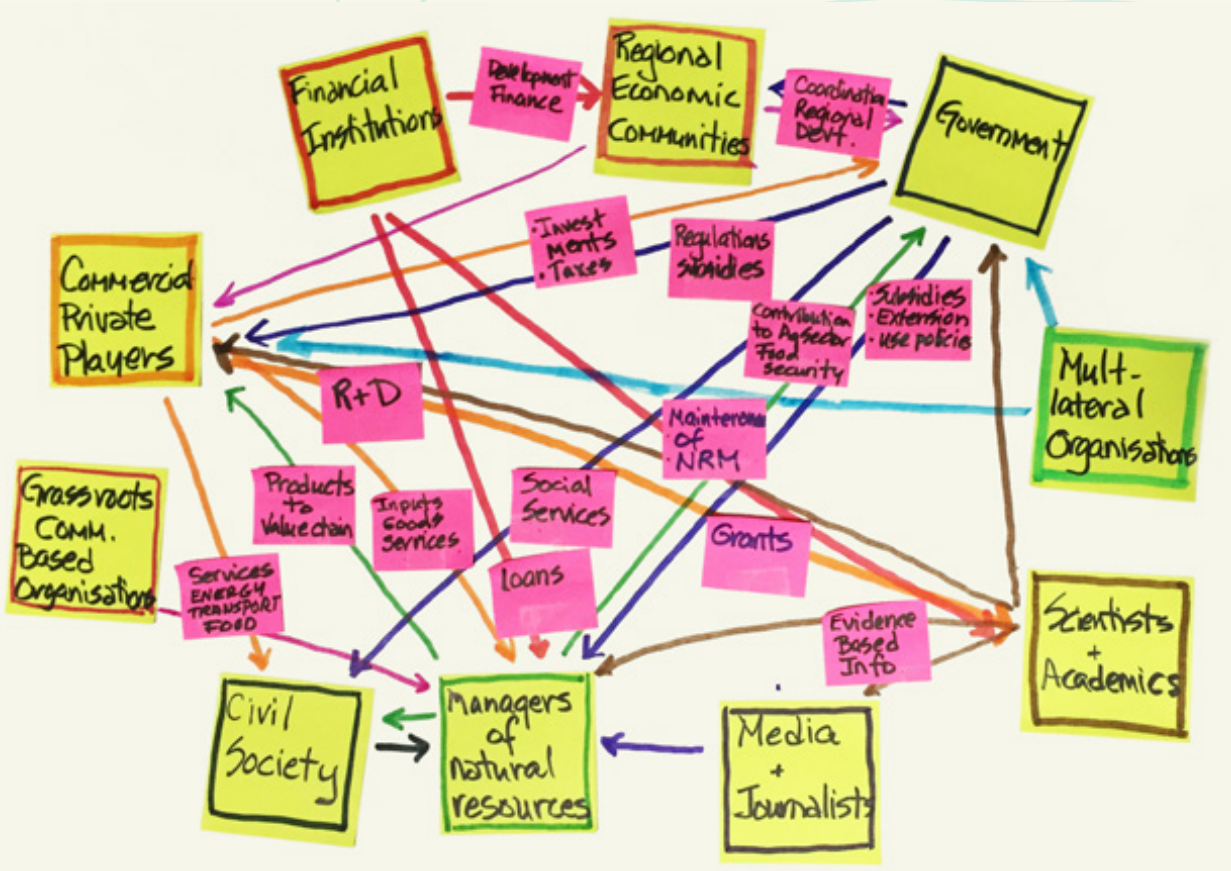
Not only do you need to identify stakeholders to include in your foresight process, it is also important to understand their relationships with each other i.e. what are they giving and what are they getting?



Learning Exercise

For the stakeholder mapping activity, you need a white board, or Post-It notes and a large piece of paper. Using different coloured pens list the stakeholders relevant to your theme. Draw arrows between stakeholders that interact and label the relationships. Use colours to illustrate the driver of the relationship.

For example, in the stakeholder map below, the scientist and academic community (brown box) provide evidence-based information (brown arrow) to the media and journalists group.



When you are **identifying stakeholders relevant to your theme** you need to think out of the box and ask questions such as:

Who are we missing?
Who else needs to be included when considering future decision making?

Examples of stakeholder groups that are likely to be crucial to future decision making are women and youth, this is explained further below.

Women disproportionately shoulder the risks and physical burden of agricultural production across SADC. If women had equal access to land/other productive resources this could lead to improved food security and nutrition for small children at the household level.

Youth have a renewed interest in intergenerational justice, frustrated by the state of the world that has been left behind for them and future generations. Additionally, with the growing youth population in SADC it is going to be important to engage with them and receive their input for inclusive decision-making.

Lastly, it is important to understand and map influence. The exercise should document vested interests and power dynamics.

When would it be best to use the foresight tools we are learning about, in terms of determining the role of youth in future food systems and building resilience towards climate change?

We are going to continue to stress youth and their role in climate resilient agriculture as we go along. **Youth unemployment and youth as consumers are important drivers in the agricultural food system** and the impact of climate change. There are several options that come to mind. It is as important as ever to have youth both involved in local and national decision making and of course involved in looking at their opportunities as we define our vision, our plausible scenarios, and the transformational elements that can increase their involvement and solution finding.

As you can imagine, developing green jobs and entrepreneurial opportunities that contribute to adaptation and mitigation to climate change will need to be operationalised and they will need to be done in a transformative way. So, determining the roles of youth in building resilient and sustainable food systems will be spread across our analysis, interpretation, plan, prospection, reflection, and strategy stages. The opportunities should start to emerge particularly in the last four stages.

Photo: student-climate-change-protests-AFP/Getty Images

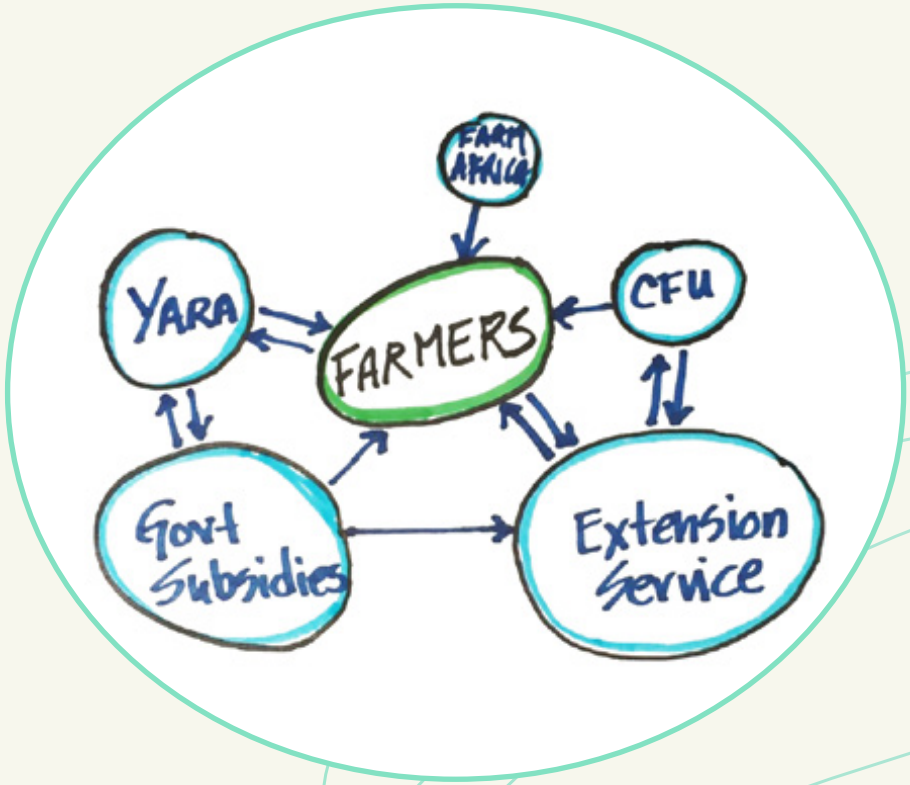
Photo: Axel Fassio (CIFOR)

Learning Exercise

To map influence, draw your chosen stakeholders as circles, the size of the circles should correlate with the perceived importance or level of influence of that stakeholder in the theme. For example, extension service providers are drawn as a large circle in stakeholder map below as they are crucial to farmers.

The 'Conservation Farming Unit (CFU)' circle is smaller than that of the 'extension services' and 'government subsidies' but larger than 'Farm Africa' the non-governmental organisation (NGO).

Next, you need to draw the relationships. The diagram on the following page shows that relationships can be one-way or reciprocal. For a one-way example you will see that 'government subsidies' are allocated to 'farmers'. For a reciprocal example, consider 'Yara', a company that manufactures and sells agricultural inputs that the farmers purchase.



You should now understand the process for setting the scope for foresight work and the dimensions of climate resilience in the SADC region.

It should be noted that the **stakeholder engagement process must be practical** and needs to take into **consideration several constraints** such as **finances, travel capacity, time, language barriers, and other access issues**. It is important to consider these constraints when identifying stakeholders and deciding on how many people to engage.

For further information on the geo-political boundary, structures, policies and stakeholders relevant to climate change and agriculture in the SADC region refer to the SADC Futures knowledge series supplementary report 'Structures, Policies and Stakeholder Landscape Relevant to Climate Change and Agriculture in the SADC Region'.

Photo: Axel Fassio (CIFOR)

References

Auricht, C., Dixon, J., Boffa, J., van Velthuizen, H., & Fischer, G. (2019). Chapter 2: Methods and Data Sources. In J. Dixon, D. Garrity, J. Boffa, T. Williams, T. Amede, C. Auricht, . . . G. Mburathi, Farming Systems and Food Security in Africa : Priorities for Science and Policy Under Global Change. London, U.K.: Taylor and Francis Ltd.

Bourgeois, R. (2012). The state of foresight in food and agriculture and the roads toward improvement. Presented at the Global Conference on Agricultural Research for Development.

Conway, M. (2014). Foresight: an introduction. Thinking futures. Melbourne.

European Foresight Platform. (n.d.). For Learn: What is foresight? Retrieved from EFP Supporting Forward Looking Decision Making: https://foresight-platform.eu/community/forlearn/what-is-foresight/.

FAO. (n.d.). Sustainable Development Goals. Retrieved from Food and Agriculture Organization of the United Nations: http://www.fao.org/sustainable-development-goals/goals/goal-2/en (accessed 24.05.2020).

Forward Thinking Platform. (2014). A glossary of terms commonly used in future studies.

IFAD. (2015). Climate-resilient agricultural development: scaling up note. Rome.

IPCC. (2012). Glossary of terms. In Managing the risks of extreme events and disasters to advance climate change adaptation. (pp. 555-564). Cambridge, UK and New York, U.S.A.: Cambridge University Press.

OECD. (2018). Using foresight methods to adapt development co-operation for the future, in: development co-operation report. Paris: OECD Publishing.

SADC. (2017). Documents and publications: SADC organogram. Retrieved from SADC Towards a Common Future: https://www.sadc.int/files/1915/4339/5147/SADC_Structure_-_2017.pdf.

SADC. (2019). Synthesis report on the state of food and nutrition security and vulnerability in Southern Africa.

UNDP. (2017). Africa and foresight: better futures in development. Singapore: Global Centre for Public Service Excellence.

UNDP. (2018). Foresight manual: empowered futures for the 2030 Agenda. Singapore: Global Centre for Public Service Excellence.

Welle, T., Witting, M., Birkmann, J., & Brossmann, M. (2014). Assessing and monitoring climate resilience, from theoretical considerations to practically applicable tools: a discussion paper. GIZ.

Woodhill, J., & Hasnain, S. (2019). A framework for understanding foresight and scenario analysis. Foresight for Food.

SADC Futures

Developing Foresight Capacity
for Climate Resilient
Agricultural Development

CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security

CCAFS

ILRI INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

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